CONTENTS

MAY, 1934

Honey Markets	260-261
Editorials	265-267
Easy Method of Inducing Granulation—Natt Noyes Dodge	268-270
An English Aviator Now a Beekeeper—Captain N. H. Turner	270-273
Florida Honey—E. R. Root	273-275
Bees Must Have Pollen—C. L. Farrar	275-278
Government Honey Exhibit	278
A Trick in Transferring—J. H. Sturtevant	279
This Beginner Makes Good—S. F. Brown	279-280
Getting the Queen Also—R. A. Fowler	280
A Good Record for a Maverick—J. H. Lutes	280
Spinster Jane Says—	281
That Burning Shame Again—E. R. Root	281-282
Comments on Current Items—J. F. Dunn	282
From North, East, South and West	283-289
Heads of Grain from Different Fields	290-292
Geo. S. Demuth—The Rev. Father M. G. Hepner	293
Talks to Beginners—M. J. Deyell	294-295
Told by the Jay	296
Who's Who in Apiculture	297
Food Department—Malitta D. Fischer	298-299
Just News	300
Gleaned by Asking—Geo. S. Demuth	301-302

Subscription Rates—One year, $1.00; two years for $1.50; three years, $2.00. Single copy, 10 cents. Canadian and foreign subscriptions, one year, $1.25; two years for $2.00; three years, $2.75. **Discontinuance**—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. **Change of Address**—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by postoffice money order, bank draft, express money order or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **Advertising Rates**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **Advertisers' Liability**—While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, O. Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.

ROOT BEE HIVES
"Accurately made of high grade material."

ROOT FRAMES
"The strongest frame made."

THREE-PLY FOUNDATION
"No other non-sag foundation equal to it."

ROOT SECTIONS
"Best on the market."

SIMPLICITY EXTRACTORS
"Used by more commercial producers than any other. Ask an owner about them."

EVERYTHING FOR THE BEES

M. H. HUNT & SON
LANSING, MICH.
510 North Cedar Street.

A Root Dealer

is ready to serve you. Choose the distributor located to serve you best from the inside back cover of your **ROOT** catalog. Buy your supplies from this convenient source.

There are over 300 **ROOT** representatives in this mid-western territory so that you may be able to get your supplies easily and with the most satisfaction.

If you do not have our 1934 catalog, send for it today. **IT'S FREE.**

The A. I. Root Company
OF IOWA
COUNCIL BLUFFS, IOWA

To New York State Beekeepers
----Beeswax----

Send your old combs and cappings to us to be rendered. We have up-to-date steam presses, handled by a man who has had twelve years' experience. Satisfaction guaranteed.

We can also have your beeswax worked into Root's Three-ply, Single-ply and Thin Super foundation at very attractive rates. **WRITE FOR DETAILS.**

We carry a complete line of Root **QUALITY** Beekeepers' Supplies, and honey containers, at all times. If your copy of our 1934 catalog has not reached you, please write to us.

A. I. Root Company of Syracuse
Midland Ave and Tallman St.
SYRACUSE, N. Y.

Serves You Best

Do Not Forget

Root
QUALITY
BEE SUPPLIES

at

A. I. Root Company
of Philadelphia
10 Vine St., Philadelphia, Pa.

Shipped direct to you from our large stock.

Save Freight - Save Time

Root Service from

CHICAGO

Beekeepers—you now have

Good Prospects

for the best year in five in this territory. Financial conditions are improving. Honey is becoming scarce and many markets will be bare before a new crop is ready. New honey will be in good demand. Beekeeping will again be the best agricultural pursuit.

Our new 1934 Root Bee-Supply catalog tells about beekeeping, methods of supering, introducing queens, installing package bees. Write for your free copy.

A. I. Root Co. of Chicago

224 West Huron Street

CHICAGO, ILL.

WE BUY!

60-lb. tins of extracted

HONEY

in carloads and L. C. L. lots.

What Have You to Offer?

HOLSUM PRODUCTS, MILWAUKEE, WIS.

—DEALERS— ATTENTION

We have a special proposition of interest to all dealers or to all beekeepers who wish to become dealers of Beekeepers Supplies. Write for information. All goods are GUARANTEED SATISFACTORY.

falcon Quality Products

W. T. Falconer Mfg. Company

Falconer, New York

• YOUR EVERY WISH FOR PERFECT SECTIONS answered by LOTZ'S with QUALITY as the keynote.

• Squareness, Rigidity, Smoothness, Perfect Fitting, Satiny Finish.

• Besides being the creator of the Oval V-Groove, we have gone further. We have eliminated the roughness and fuzz that appear on the dovetailed edges of so many sections.

• Why shouldn't LOTZ SECTIONS be the leaders on the American market? We devote all of our time to SECTIONS. Our factory operates solely for that purpose. Our skilled workmen have only one thought in mind—producing the perfect SECTIONS.

• We will be glad to send free samples, so write us today.

August Lotz Company

Boyd, Wisconsin

Hilbert Method Cut Comb Honey

Write for our new catalog which will include free full information on Cut Comb Honey Hunks and Chunks.

Jas. E. Hilbert, Traverse City, Michigan.

EDWARDS METAL ROOFING

BUY NOW--SAVE MONEY

Protect your home and farm buildings from fire, lightning, wind and weather before advancing costs force roofing prices higher.

Send Roof Measurements Immediately. We will quote you a money-saving, freight-paid price backed by our $10,000 guarantee. Ask for Catalog 84.

THE EDWARDS MANUFACTURING CO.

533-583 Butler St Cincinnati, O.

Honey Markets

Information from producing areas (first half of April.)

California Points: Southern California—Since the weather has become warmer prospects for the orange crop have brightened; however, the flow is very much lighter than normal. In several sections the crop is reported hardly 25 to 30 per cent of normal. Thousands of colonies have been moved into the Riverside orange district, not only from the sage and wild buckwheat ranges but from other orange producing counties where the bloom was less abundant. Black sage has been in bloom but has furnished very little nectar, and unless rain falls very soon the later sages and buckwheat will also yield little honey. Bees are working on deer weed, filaree, currant and willow and are brooding normally, but many colonies are weak and light. Demand for honey has been lighter, with the market showing a slightly weaker tendency toward the close of this period. Sales by beekeepers reported as follows, in ton lots or more, per lb.: Orange, extra white to water white, mostly 5-5 ½c; few, 4 ⅞; white mostly, 4 ⅞-5c; few, 5 ½c; and few, 4 ½-4 ¾c; extra light amber, 4 ⅛-4 ½c; sage, extra white to water white, 4 ⅞-5 ½c; extra light amber, 4-4 ½c; mostly, 4 ¼-4 ½c; light amber, 4-4 ¼c; sage-buckwheat, extra light amber, 4 ⅛-4 ⅜c; light amber mostly 4-4 ⅛c; occasional sale up to 4 ¼c; light amber buckwheat, 4 ½c; mixed flowers, light amber to extra light amber, 3 ¾-4c; amber, 3 ¼-3 ½c mostly 3 ½c; Imperial Valley alfalfa, extra light amber, 4 ⅛-4 ½c; light amber, 3 ⅞-4 ¼c. The beeswax market has been fairly active and firm, with dealers offering 16-17c per lb. for good quality yellow wax delivered Los Angeles, 15-15 ½c for poorer quality. Central California—Old crop is nearly cleaned up. Few sales by beekeepers, per lb., orange, white to extra white, mostly 5c; alfalfa, light amber, 4-4 ½c; amber, 3 ½-4c; wild flowers, light amber, old crop, 3 ½-3 ¾c; new crop, 4c; new crop light amber prune and eucalyptus, 3 ½c. Demand and trading for beeswax has been slower but the market has held steady at 17-17 ½c per lb. for best, 14-15c for fair quality. Northern California—Sales reported, light amber thistle, 4 ¾c, with most thistle being held for higher prices; amber alfalfa, 3 ½c; light amber mixed flowers, 3 ½-5c per lb. Beeswax, 17c per lb. Dark amber mixed, 4 ½c ; extra light amber manzanita, 4 ¼c per lb.

Intermountain States: Demand for honey in carlots has been good recently, and numerous cars have been sold during the past two weeks. Extracted honey, sales reported, white to water white sweet clover and alfalfa, carlots 4 ½-5 ½c, with several cars at the 5-5 ½c range, an occasional car slightly below 4 ½c; ton lots, 4 ¼-5c, few higher; 60s, 5 ½-6c; small pails, 6 ½-8c per lb.; light amber, 1 car, 3 ½c per lb; 60s, 5c; small pails, 6c per lb. Few sales comb honey, $2.00 per case. Beeswax, 16-20c per lb.

Summary.—Warm weather has continued over much of the West, and the East has been warm also during most of this period, though temperature fluctuations in both the eastern and central states have been wide. Snow has fallen over parts of the extreme North, and rainfall has been heavy in the west gulf area and locally

A Good Rule to Go By

BUY YOUR BEES AND QUEENS FROM

Alabama Apiaries

MT. PLEASANT, ALA.

Italian Queens and Bees accredited by Alabama Dept. of Agriculture. We support the American Honey Institute. We specialize in queen-breeding. Our experience and equipment insure satisfaction.

Queens, 1-9, 85c; 10-24, 80c, postpaid.
2-lb. pkg. with queen, 1-9, $2.65; 10-49, $2.55.
3-lb. pkg. with queen, 1-9, $3.40; 10-49, $3.30.
F. O. B. Bay Minette, Ala.

For Sale

107 colonies and equipment belonging to the late George S. Demuth including half acre used for apiary and honey house, located near Peru, Indiana. Bees guaranteed free from disease. Will sell all or part, with or without land. Communicate with Mrs. George S. Demuth, Medina, Ohio.

Mountain Gray Caucasians

FOR MAY AT CODE PRICES

10 years of selective breeding of this race of bees only enables us to offer you good quality. Our prices are as follows: Untested queens, 1 to 9, 85c each; 10 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each. No disease has ever been known to exist in our Caucasians. Our service is guaranteed.

Bolling Bee Co., - Bolling, Ala.

Honey-Getting Package Bees
Handy to Eastern Buyers

Our bees have been selected for honey gathering qualities for a number of years, and are guaranteed to please. Being nearer to the East, bees arrive less travel worn. With 34 years keeping bees, we can give you the best that experience and ingenuity can devise. Code prices.

L. L. FEREBEE, PINELAND, S. C.

in portions of the plains and eastern states. Broodrearing is far ahead of normal over the entire West, but delayed in much of the East and North. Spring dwindling has added to winter losses in many areas, a condition which is aiding in making orders for southern package bees and queens among the heaviest on record. Many beekeepers, however, especially in the West where colonies came through the winter in better condition, are planning to make increase by division rather than by purchase of packages. Some surplus is already being made on the Pacific coast where, however, the orange flow is far below normal, and where lack of moisture is sharply cutting prospects for a sage and buckwheat crop.

Demand for honey in carload lots has been good, and numerous carlots have been sold during this period, especially in the Intermountain area. Stocks almost everywhere are light, and it appears that the carry-over will be negligible in practically all sections, with many areas completely cleaned up. Price changes have been unimportant during this period, but many beekeepers are in hope of securing higher prices for their remaining stocks. Comb honey is extremely scarce. Export demand during this period has been slight.

Monthly Report of Honey Producers

Early in April we sent the following questions to honey producers: 1. What is your estimate, revised to date, of the amount of last year's honey crop not yet sold in your locality? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid. 6. What is the present condition of the honey plants in your locality as compared with the average. Give answer in per cent. 7. What is the present condition of the colonies as compared with normal. Give answer in per cent. 8. What is the per cent of winter and spring loss to date (if any) in your locality? Give answer in per cent. The answers received are tabulated below:

State.	Name.	Crop unsold.	Carload lots. Ex.	Carload lots. Comb.	To grocers. Ex.	To grocers. Comb.	To retailers. Ex.	To retailers. Comb.	Movement.	Cond. honey plants.	Cond. colo.	Pct. loss
Ala.	(H. C. Short)	..	..	..	..	..	$.50	..	Slow	100	100	1
Ala.	(J. M. Cutts)	0	..	..	$.55	..	.65	..	Fair	90	70	1½
Ala.	(J. C. Dickman)	10	..	..	.40	..	.53	..	Fair	80	80	5
Ark.	(J. V. Ormond)	0	..	..	..	..	..	..	Slow	100	100	1
B. C.	(A. W. Finlay)	0	.10	..	.65	..	.85	..	Fair	100	100	17
Calif.	(L. L. Andrews)	10	.05½	..	..	..	.67	.15	Fair	20	80	
Calif.	(Geo. Larinan)	10	..	..	..	..	..	..	Fair	10	70	
Colo.	(O. E. Adcock)	0	.05¼	2.50	.37½	2.50	.45	.15	Fair	100	100	1
Conn.	(A. Latham)	20	..	..	.80	4.75	1.00	.28	Fair	100	50	30
Conn.	(A. W. Yates)	..	..	..	.70	5.00	1.00	.30	Fair	100	50	50
Fla.	(C. C. Cook)	10	..	..	.30	..	.40	..	Fair	100	100	10
Fla.	(H. Hewitt)	20	.04	..	.40	..	.55	..	Fair	100	100	0
Ga.	(J. J. Wilder)	5	.05	..	.40	..	.50	..	Fair	90	90	5
Idaho	(R. R. Isbell)	10	.05¼	..	.32	..	.40	.15	Fair	110	125	3
Ill.	(A. L. Kildow)	5	..	..	..	..	.50	.15	Fair	..	100	5
Ind.	(Jay Smith)	0	..	..	.45	3.00	.55	.15	Fair	100	75	25
Ind.	(T. C. Johnson)	0	..	..	.50	3.60	.60	.20	Fair	100	100	2
Ind.	(E. S. Miller)	..	..	..	.45	3.00	.60	.15	Fair	50	90	15
Iowa.	(E. G. Brown)	5	.05	..	..	..	.50	.18	Fair	50	90	11
Iowa.	(F. Coverdale)	0	..	..	..	..	.38	.12	Fair	90	100	1
La.	(E. C. Davis)	10	.05	..	.35	..	.50	..	Fair	100	100	
Maine.	(O. B. Griffin)	20	..	..	..	5.00	..	.33	Slow	100	..	
Mich.	(I. D. Bartlett)	2	..	..	.45	3.50	.55	.18	Fair	95	85	20
Mich.	(F. Markham)	5	.06½	..	.40	2.75	.55	.15	Fair	80	100	5
Mich.	(E. D. Townsend)	0	.07	..	..	..	..	..	..	75	100	20
Minn.	(Francis Jager)	0	.6½	..	.37½	..	.50	..	Fair	80	100	40
Minn.	(F. W. Ray)	10	.06	..	.45	..	.49	..	Slow	90	90	15
Minn.	(B. L. Morehouse)	20	..	..	.45	..	.60	..	Fair	50	85	5
Nebr.	(J. H. Wagner)	0	.05½	3.25	.55	3.60	.60	.20	Fair	75	80	1
Nev.	(Mrs. E. G. Norton)	10	.05	..	..	..	..	..	Fair	50	90	4
Nev.	(G. G. Schweis)	5	.04½	..	.40	2.25	.50	.15	Slow	75	110	0
N. Y.	(Adams & Myers)	0	..	..	.50	3.60	.70	.20	Fair	90	75	25
N. Y.	(G. B. Howe)	..	..	..	.50	3.60	.58	.20	Fair	75	90	18
N. Y.	(F. W. Lesser)	..	.07	..	..	..	..	..	Fair	90	90	10
N. C.	(C. S. Baumgarner)	0	..	..	.50	3.60	.65	.20	Slow	100	100	15
N. D.	(Chas. Engle)	5	..	..	.40	2.75	.50	.15	Slow	50	90	10
Ohio.	(F. Leininger)	0	.07	..	..	..	..	..	Fair	100	100	5
Ohio.	(J. F. Moore)	..	..	..	.45	3.00	.60	.17	Slow	90	70	
Ohio.	(R. D. Hiatt)	0	..	..	.57	4.00	.75	.23	Fair	90	85	8
Okla.	(C. F. Stiles)	5	..	..	.50	..	.65	.18	Fair	90	90	5
Ore.	(H. A. Scullen)	0	..	..	..	..	.50	..	Fair	100	110	5
Penn.	(Harry Beaver)	5	..	..	.50	..	.60	..	Slow	80	85	20
Penn.	(D. C. Gilham)	6	..	..	.75	4.00	1.00	.25	Fair	80	75	40
Penn.	(H. B. Kirk)	..	..	..	.75	3.75	.95	.23	Fair	75	85	30
S. C.	(E. S. Prevost)	..	..	..	.55	..	.65	..	Slow	100	80	10
Tenn.	(J. M. Buchanan)	0	..	..	..	..	.75	..	Slow	95	100	2
Tenn.	(W. L. Walling)	0	..	..	..	..	.75	..	Slow	90	100	0
Texas.	(J. N. Mayes)	0	.05½	..	..	..	.40	..	Fair	90	70	15
Texas	(H. B. Parks)	0	..	..	.40	..	.50	..	Fair	90	90	4
Utah.	(M. A. Gill)	0	..	..	.30	2.40	.35	.15	Fair	75	100	3
Va.	(T. C. Asher)	5	..	..	.50	3.00	.65	.18	Fair	90	80	7
Wash.	(W. L. Cox)	10	.05¼	..	..	..	..	..	Fair	115	125	3
Wash.	(G. W. B. Saxton)	0	..	..	.38	..	.45	..	Fair	100	100	0
W. Va.	(W. C. Griffith)	50	..	..	.35	2.35	.50	.13	Slow	50	50	20
Wis.	(N. E. France)	0	..	..	..	..	.58	.14	Slow	20	90	5

Bee Supplies at Money Saving Prices

Some of our distributors have stocks of slightly shop-worn bee supplies. These goods are offered at prices considerably below those quoted now. All goods are quoted for cash with order and F. O. B. shipping point.

Send order for the following to

A. I. Root Co. of Philadelphia

10 Vine St., Philadelphia, Pa.

3—489—Root's wax presses, single, $15 each.
5 prs.—Medium drill bee gloves, without fingers, 40c each.
3—G4090—Storage tanks, 80-gallon, honey gate attached, $11.00 each.
2—215—Sets of 5 wooden letters for honey sign, nailed only, 75c each.
1—How to Keep Bees, 75c each.
10—Packed rims, shallow depth, nailed and painted, $1.20 each.
10—Packed rims, full depth, nailed and painted, $1.50 each.
2—Swarm catchers, old style, without poles, 50c each.
1—254—Veils, of mosquito bar entirely, 25c each.
1500—Plain comb honey cartons for 4 x5x1⅜", 50c hundred.
25—Chaff division boards, 15c each.

Send order for the following to

A. I. Root Co. of Syracuse

Midland Ave. and Tallman St., Syracuse, New York.

1—4-frame Buckeye Extractor, 12" pockets. Equipped for both power and hand operation. Perfect condition. Cost $250.00. Price, $50.00.
1—4-frame Buckeye Extractor. Power, 9½" pockets. Perfect condition. Price, $30.00.

Send order for the following to

F. Coombs & Sons

Brattleboro, Vermont.

16—Root hot bed sash, nailed and painted, without glass, $1.00 each.
500—Danz. shallow frames, $2 per 100.
300—All wood frames, ⅜" top bar, $2 per 100.
15 doz.—2-lb. square honey bottles with corks, 40c per case 1 doz. each.
80 lbs.—Extra thin super foundation, 3x14¼", 50c per lb.

Send order for the following to

A. I. Root Co. of Indianapolis

121 N. Alabama St., Indianapolis, Ind.

4 KD—10-frame supers, 4¼x4¼x1½, each, 75c.
300—Jumbo frames, per 100, $2.50.
50—Alexander feeders, each, 25c.
3,000—Individual sections, 90c per 100, 1000, $6.50 (2x2½x1⅜).
320—Special fences for above, 10c ea.
3,000—Individual sections 2⅛x2⅛x1½, 90c per 100, or 1000, $6.50.
125—Special fences for above, 10c ea.

Send order for the following to

Georgia Bee Supply Co.

Box 134, Savannah, Georgia.

14 boxes—2750—4 x 5 x 1⅜ shipping cases, 10s, $3.00.
10 boxes—3⅝x5x1½ section shipping cases, 10s, $2.50.
1 box—N section frames, 4¼x4¾x1⅞ sections, 100s, $2.50.
12 boxes of 5 plain section supers, 4¼ x4¼x1½ sections and fittings, 5s, $4.50 per case.
15—Hive seat and tool boxes, KD, each, 75c.
500—M fences for 4 x 5 sections, $4.00 per 100.
3 boxes of 500 3⅜x5x1½ sections, 500s, at, $4.50.
11 cases—Old style section holders, 4¼x1½, 100s, $3.00.
2 cases—Old style shallow extracting frames, 100s, $3.00.
1000—8-frame rabbets, old style, no holes, 90c per 100.
500—8-fr. flat tins, old style, no holes, 75c per 100.
10—22532—Supers and fittings for 4¼ x1½ plain sections, 1s, at $1 each.
50 lbs.—4564—Old style end space staples for brood frames, 20c per lb.
4 cs.—7273—Folding comb honey cartons for 4¼x1½" sections, $2.50 per case.
100—Super followers, $2.50.

3% Banking by MAIL

Put Your Money to Work in a Savings Account here. Safety, regular interest-earnings and ready availability assured.

E.B. SPITZER PRESIDENT
E.R. ROOT VICE-PRES.
H.E. AYLARD CASHIER

THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO

DON'T CHOP THE GRASS. Shave the ground with "**Marugg Special**" imported dangel cutting edge scythe. Catalogue free. Address **The Marugg Co.**, Dept. B, Tracy City, Tenn.

PALMETTO QUALITY QUEENS

Hundreds of colonies in the U. S. and Canada are headed with these queens, waiting for the honey flow to yield bumper crops of honey for their thrifty owners. Prices, 1 to 9, 85c each; 10 to 24, 80c each; 25 to 40, 75c each; 50 or more, 70c each. Three-band Italians only. No disease, square deal. Operating under N. R. A.

C. G. ELLISON, BELTON, SOUTH CAROLINA

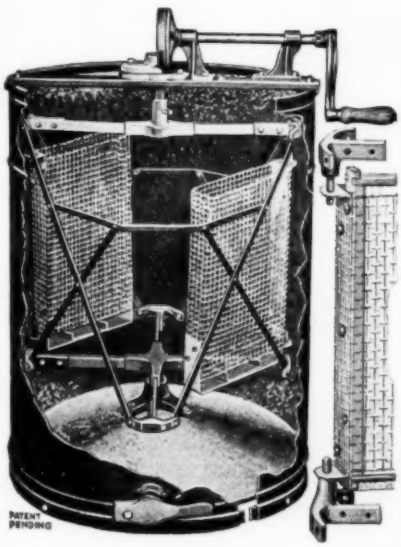
WALTER T. KELLEY

CYPRESS BEE HIVES

Very low prices on cypress hive bodies, supers, bottoms and covers. We are located right at a big cypress saw mill and supply extra select grade of cypress at a saving.

Soft white pine Hoffman frames at lowest prices. Wax worked into comb foundation. We manufacture our own bee hives, frames, comb foundation, etc., and issue our own catalog. Write for our free 1934 catalog.

Gulf Coast Bee Company, Houma, Louisiana



Not a Drop of Solder Used—Riveted to Last Can't Come Apart.

Prepare Now for That Next Crop

••

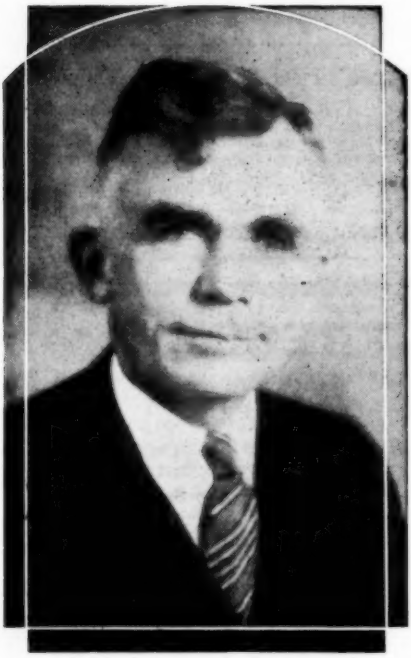
Have you had experience trying to resolder metal parts, that have been covered with honey? Don't go through that again. Try a Woodman all-riveted Extractor. All sizes and capacites from bench size to power radial.

••

Send for Special Circular.

A. G. Woodman Company
Grand Rapids, Michigan

Stay With the Bees for Success!



I Believe in Honey Production as a Business

"With surpluses all around us, we have a shortage and an advancing market. Some young, progressive, commercial beekeepers are making money, building modern homes and honey houses and educating their children. They have learned to increase production and at the same time decrease cost. They have learned how to produce honey for the price of sugar. Such men can always take a profit. We need efficient production and the distribution of a standardized, high class honey. Modern methods offer a challenge for us, either to get in or to get out."

—M. N. DILLON, MICHIGAN.

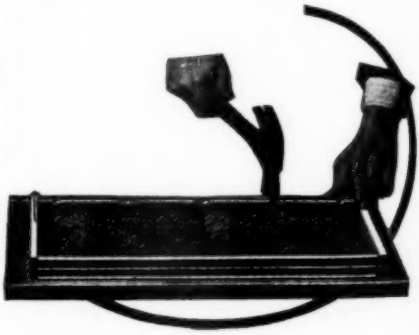
For Better Beekeeping-- Use Dadant's Foundations

Dadant's Crimp-Wired Foundation with that Extra Strength Builds Better Combs.

Dadant's Plain Foundation—Standard everywhere for fifty-five years.

Dadant's Surplus Foundation for your Finest Comb Honey.

"Dadant's Crimp-wired Foundation is a winner. That hook on the wire supplies a deficiency in wired foundation. I have three or four hundred combs with straight end wires, and over 3,500 with the steel foundation hooks. Not a single one with the hooks pulls out. It ought to appeal to every beekeeper."
—M. N. Dillon.



Dadant & Sons, Hamilton, Ill.

Makers of Famous Foundations
Wired--Plain--Surplus

MADE ONLY OF PURE, CLEAN BEESWAX

Gleanings in Bee Culture
MAY, 1934

Home Again

The senior Editor expects to arrive home from the South about May 1. He has gathered a wealth of material including some fine pictures which will be placed before our readers from time to time. While you of the North have been enjoying crisp cold and blizzards, he has been basking in the sun and dipping into the waters of the Gulf of Mexico. The cold of the North has seemed unbelievable to those of us in this land of balmy air and "eternal youth."

Don't Let Bees Starve

The unusually cold winter has taken a heavy toll of bees, especially in the northeastern section of the United States and Canada. Many colonies that managed to survive the continuous zero weather are weak and short on stores. Some sugar syrup and a pound or two or bees given to each weak and starving colony may make the difference between a good crop of honey and no crop at all.

Importance of Pollen

In some regions there is a shortage of pollen which interferes with normal brood rearing. The tupelo honey region along the Apalachicola River of north Florida is a notable example of this. As a rule, pollen is so scarce following the tupelo honey flow that it is frequently necessary to move bees where pollen is obtainable.

In other regions pollen is so plentiful that bees store great quantities of it in the combs of brood chambers. Beekeepers frequently inquire what they should do with pollen clogged combs. As a rule, the pollen in such combs is practically all used by the bees for brood rearing by the time the next major honey flow starts.

In the fall it is common to find large quantities of pollen packed firmly in cells adjacent to the brood. In some cases the pollen is unprotected. It is possible some substance is added by the bees to preserve the pollen. In some cells the pollen is covered with honey and capped over. This surplus pollen is needed for brood rearing early in the spring before fresh pollen is collected by the bees. During a long rainy spell in the spring when bees are unable to fly out after pollen, colonies with a reserve of pollen can continue brood rearing, whereas, colonies short of pollen may have to suspend brood rearing for a time.

Some have considered combs containing pollen unsuitable for wintering bees. While pollen is needed for brood rearing, the adult bees do not appear to use it as a food. It is hardly possible therefore that the presence of pollen in combs would be detrimental to good wintering.

Operating Distant Out-apiaries

On page 302 of this issue Mr. Demuth tells how he managed his apiaries, some 260 miles from Medina, for comb-honey production, while editing Gleanings. This is one of the last questions he answered for the "Gleaned by Asking" department.

Dividing Strong Colonies

In well managed apiaries throughout the clover regions it is not uncommon to find very populous colonies, with brood in eight or ten combs early in May. Such colonies are likely to swarm during the fruit bloom and dandelion honey flow unless additional comb space is provided.

In sweet clover and alfalfa regions where the main honey flow begins late in June and continues until early August, strong colonies can be divided in early May. The divisions can be built up to colonies of normal strength in time for the main honey flow.

Double-story deep food chamber colonies usually have plenty of honey in the spring and they are quite easily divided. All the extras needed for dividing each colony are a bottom board, hive cover and a laying queen. It is an advantage to give the queenless division a laying queen rather than a ripe queen cell. Some feeding may be necessary if the spring honey

flow fails. And thus it is possible to practically double the honey crop with very little extra expense.

Spring dividing is rarely profitable in white clover and alsike regions because it is difficult to get the divisions built up in time for the main honey flow which comes earlier and is of shorter duration than the sweet clover and alfalfa honey flow.

Moving to Better Bee Pasture

An amusing incident occurred recently. Two commercial beekeepers in the same locality decided to move some of their bees to new pasture. They found what they thought were suitable locations. At the close of the honey flow they discovered that they each had moved an apiary to the same locality, and that the apiaries were about a quarter of a mile apart, one apiary on one side of a woods and the other on the opposite side of the woods.

Finding a suitable location for an apiary is not an easy job. There are at least five important requirements: (1) the apiary should be at least three or four miles from other commercial apiaries, (2) the nectar and pollen sources should be abundant and dependable, (3) a never failing supply of water should be near the bees, (4) the apiary should be a reasonable distance from highways, buildings, and cultivated fields, and (5) the apiary should be easy to get to. There are few, if any, perfect apiary locations.

Honey in Golf Balls

Several months ago representatives of the L. H. Young Golf Company of Detroit, approached the editors of Gleanings asking a number of questions regarding honey as a center for golf balls. A golf ball, it seems, must contain a heavy liquid that can not break down regardless of the strain or shock, and that will remain mobile under conditions found on the average golf course.

We were able to give the necessary assurance that honey, by its very nature, can not be disintegrated by shock. It weighs approximately 50 per cent more than water, and for a reasonable length of time, especially if heated, can be depended upon to remain free from fermentation or crystallization. However, we recommended the use of those honeys in which the levulose content is so great that they are practically non-granulating.

Here's success to the new Honey Center Hagen golf ball. Honey starts its career flying through the air propelled by the powerful wings of the bees. May a large portion of it continue to fly through the air propelled by the powerful swings of an increasing number of golf enthusiasts!

The Future of Beeswax

In *pounds*, the amount of beeswax produced in the United States, compared to the honey, may not be over two or three per cent. In *dollars*, the proportion is greater. It is probably conservative to say that the annual production of beeswax is worth from seven and a half to ten per cent as much as the honey. At present prices the total value of the beeswax produced in United States annually is probably around a million dollars.

While the manufacture of comb foundation takes relatively only a small proportion of the beeswax produced, it is interesting to note that the comb honey producer is essentially a user of beeswax, while the extracted honey producer is essentially a producer of beeswax, in that he ordinarily produces much more than he uses.

There is very good evidence to show that beeswax is still the best insulating wax for coils and that the manufacturers of coils and other appliances are not using substitutes as much as they once anticipated, yet beeswax has many competitors in the shape of various vegetable waxes and resins, and more recently in synthetic waxes obtained by hydrogenizing certain heavy vegetable oils.

One of the frequently expressed objections to beeswax on the part of large users, such as manufacturers of electrical appliances, dental wax, cosmetics, polishes, etc., is that it varies so much. Most natural products do vary but it is a fact that beeswax varies more than it should. There is a difference between beeswax melted from new combs or from cappings and beeswax melted from old combs. The former is freer from propolis and therefore it has a lighter color, a more pleasing aroma and a higher melting point.

But not all beeswax can come from cappings. Beeswax rendered from old combs is good beeswax and may be almost as pure as that from cappings on new combs. One reason for the contamination of much of our dark beeswax today is due to the carelessness of the beekeeper him-

self. Scrapings of hive-bodies, frames, covers, floor boards, etc., should not be thrown in with the wax. Such scrapings are often composed of 40 to 50 per cent low melting point gums from propolis. Such soft gums retain their low melting point even when mixed with beeswax, thus contaminating the wax with something inferior and of little value. Gleanings has sounded this warning before but it will bear repeating. Keep scrapings out of the beeswax. Do not carelessly contaminate a valuable product like beeswax. The propolis varnished on the combs by the bees themselves is natural and can not be helped. However, that contamination is slight and it need concern no one.

It is unlikely that beeswax, the toughest wax for its ductility, of any wax known, will ever go out of use in other industries. But with various new waxes coming into competition, with vegetable and mineral waxes available, beekeepers should give more attention to that which is easily worth ten per cent of the total output of the bees.

An Opportunity for Bee Associations

There is an opportunity for county bee associations to co-operate with bee inspectors in the control of American foulbrood. The following plan has been tried and found successful in county disease clean-up work: After a county bee association has been thoroughly organized a key man is appointed for each township in the county. It is the duty of the key men to locate all the apiaries in their respective townships. After all of the bees in various townships have been located, these apiary locations should be marked on a county map with the owner's name and number of colonies in each apiary. This work should be done under the supervision of the president of the association.

When the bee inspector is ready to start work in the county he is turned over to one of the key men who assists him in finding all of the apiaries he has located. When inspection work in that township is completed the inspector is turned over to the key man of an adjoining township and so on until all of the townships in the county are thoroughly inspected. In this way inspection can be done economically and with the least amount of effort and time.

Each key man can keep an eye on the bees that are moved into or out of his township. A township is usually about five miles long by five miles wide and it is a comparatively easy matter for a key man to keep in touch with beekeeping activities within the borders of his township.

At present when appropriations for bee inspection work are so meager it is extremely important that bee associations co-operate with bee inspectors in this important work.

Support Senate Bill 2800

The Tugwell bill, introduced into the Senate last June, started discussion on the degree of control needed for the quality of foods, drugs and cosmetics. Persons interested in the welfare of the consumer believe that strict control is essential, and in order suitably to safeguard consumers, they desire to prohibit untruthful advertising. This provision is included in the Tugwell bill. So much opposition has come from patent medicine and cosmetic manufacturers and dealers in food frauds that the Tugwell bill can not pass the present Congress.

Senator Copeland then introduced a second food bill, but it has had little consideration. Finally he introduced a third bill (Senate Bill 2800), which is receiving serious consideration. It is weaker than the Tugwell bill but stronger than existing laws. While honest food producers and intelligent consumers will believe that the strongest possible bill should be enacted, it is better to be practical than visionary in such matters, to take all that we can get, and then we can later ask for more.

Manufacturers of fraud foods and medicines have told the committee they favor consumer protection, but each one has then given reasons why certain features of the bill must be changed, so as to protect the pet frauds of the testifiers. Newspaper and especially magazine publishers (women's magazines were the worst) and radio managers have waxed eloquent on behalf of the consumer, but they have objected to the necessity of truthfulness in advertising. They insist that one should be allowed to puff his wares legitimately, but it is hard to distinguish between puffing and untruthfulness. At present lies are in the majority.

It is well for senators and members of Congress to get word from home that they should support the best bill and that they should not listen solely to manufacturers of fraudulent goods. Tell them to support Senate bill 2800.

Easy Method of Inducing Granulation

Natt Noyes Dodge

This Simple Method May Help Supply the Growing Demand for Granulated Honey

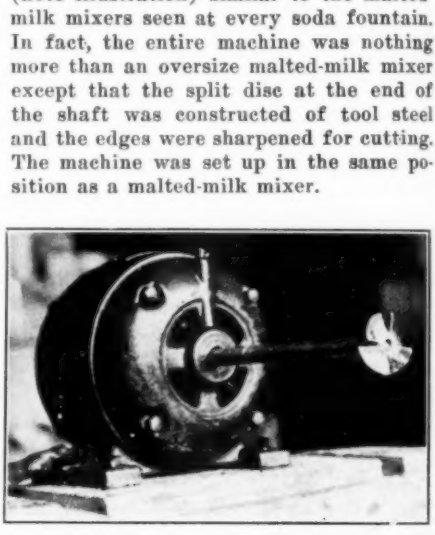
Can the beekeeper successfully prepare and pack a soft, smooth, clean, granulated honey? Can he go farther and use liquid honey, causing it to granulate within a period of, let us say, forty-eight hours? Experiments which the writer has carried on during the last six months indicate an affirmative answer to both of these questions.

A few years ago the cry was, "How may we prevent granulation?" Now, with a growing demand for a smooth, soft, clean, granulated honey, some beekeepers are wondering if there is a practical method for inducing such granulation. Several articles regarding controlled granulation have appeared in the beekeeping journals during the last year or two, indicating that such a process is possible. The writer has done so little work along this line, and realizes that there is such a difference in honeys and in their form, texture and rapidity of granulation that he hesitates to make statements that may not apply beyond his own experience. However, he may outline the results of what work he has done, and let the beekeeper who has found a demand for honey in the solid form, use the information as a basis for similar work with his own honey and his own market.

People Like Granulated Honey

Several years ago the Mountain States Honey Producers' Association perfected a machine for grinding and whipping granulated honey. This product was put on the market under several trade names. Later, the manufacture of the product was discontinued, but there remained a definite demand. People liked the granulated honey. It didn't run, it spread readily, made a tasty filler for sandwiches, graham crackers, and the like, and was a new, novel, and delicious addition to the bridge luncheon or party refreshments. Children liked it. Consequently when it was taken off the market, something of a cry of disappointment arose from those who had become consistent purchasers.

Encouraged by this demand, the writer had a small machine made consisting of a one-fifth horsepower electric motor of 1750 revolutions per minute with an elongated shaft equipped with a device (note illustration) similar to the malted-milk mixers seen at every soda fountain. In fact, the entire machine was nothing more than an oversize malted-milk mixer except that the split disc at the end of the shaft was constructed of tool steel and the edges were sharpened for cutting. The machine was set up in the same position as a malted-milk mixer.



Electric motor equipped with device for grinding granulated honey. It also acts as a mixer when preparing the ground up, solidified honey with liquid honey.

The writer found that with this machine the granulated honey which had solidified in five-gallon cans could be ground up into a very satisfactory product. However, there were three objections. First, the process was slow and difficult; second, the product was lumpy if the granulated honey was very hard; and third, it usually contained specks of wax and dirt that were unappetizing in appearance and naturally interfered with public acceptance.

An Interesting Discovery

One day an order was received for a quantity of this granulated honey. Unfortunately there was an insufficient amount at hand for grinding. After preparing what was available, with the memory of reports published regarding controlled granulation, the writer added sufficient liquid honey to complete the order. This was thoroughly incorporated with the previously ground granulated honey by

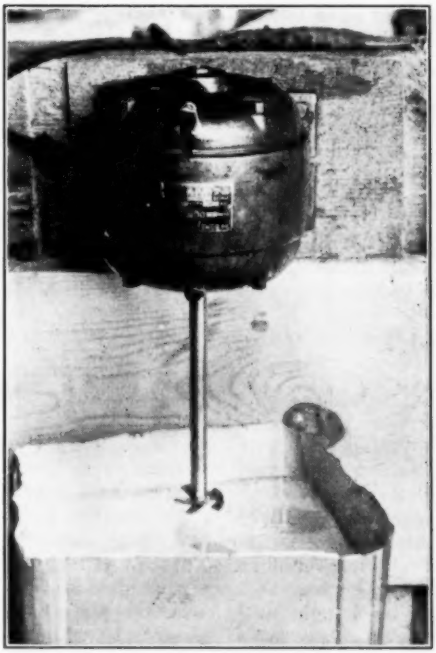
means of the mixer. On the following morning, the entire lot appeared as if it had been made up from the granulated honey, and was accepted by the purchaser.

There followed a series of experiments consisting of mixing various quantities of liquid honey with the granulated honey ground up by the previously mentioned process. Two varieties of honey were used, fireweed and alfalfa. In every case, after thorough mixing, the finished product developed a smooth, lard-like granulation within forty-eight hours after mixing. Then this product was used as the solid base, liquid honey mixed thoroughly with it, and the resulting creamy material set aside for forty-eight hours. The same, soft, smooth granulation was obtained. It was found that the most satisfactory results came from the use of approximately half and half of the solid and liquid constituents. When a greater proportion of liquid honey was used, the finished product was darker in color.

Correct Temperature Important

Temperature was found to play an important part in this method of induced granulation. Although liquid honey of a temperature as high as 100 degrees F. was used satisfactorily, it was found that the granulation process took place most favorably in a temperature between 60 and 70 degrees. Below 60, a very hard granulation resulted. Above 70, the product remained too soft for satisfactory use. After granulation, however, it would stand a temperature of 80 degrees without softening. Above 80, it became quite soft but would stiffen again when returned to the lower temperature. The public was advised to keep the product in a refrigerator but to allow it to stand in a warm room for some time prior to use if it were to be spread. In short, it should be kept under the same conditions as butter.

"Raw" or granulated honey is finding a growing market through the health-food stores. Here is a package put on the market by Mr. Sherman Whitney, the up-to-date beekeeper of Puyallup, Washington. The product is excellent, white, granulated honey, and the legend on the cover ties in with the sales talk of the health food folk.



Another view of the mixer, showing a "batch" of liquid and granulated honey thoroughly mixed and ready to be put aside for 48 hours to "set."

By this means of induced granulation of liquid honey, the three objections to the grinding of naturally crystallized honey are overcome. The product does not become hard, consequently lumps do not develop. The liquid honey has been carefully strained, so there is no dirt or objectionable foreign matter present. Because of the soft, smooth texture of this product, its mixing with liquid honey is easy and rapid. However, mixing must be very thorough if satisfactory granulation is obtained.

Overheating Unnecessary

As previously stated, the writer makes no guarantee as to how other honeys will respond to this process of inducing granulation. Neither can he prophesy how this product will be received in other markets. Health food folk advocate the use of granulated honey because it has not been heated. Since honey which has been solidified by induced granulation has been heated, it can not be sold, honestly, as un-

heated honey. However, the writer is of the opinion that honey which has not been overheated; i. e., has not reached a temperature above 130 degrees F., and has not been held at that temperature longer than one hour, is so very similar in all of its health and food values to strictly unheated honey, that even the most conscientious food faddist would never be able to notice the difference in physiological results.

No doubt our scientific men who have given us the basis for controlled granulation, will consider this method both slipshod and unscientific. Probably it is, but it has proved both possible and practical during the short time that it has been tried. The writer offers it for what it is worth in the hope that it may prove useful to beekeepers in increasing their sales and widening the use to which the most healthful of sweets may contribute to the welfare of mankind.

Seattle, Wash.

An English Aviator Now a Beekeeper

Captain N. H. Turner, R. A.

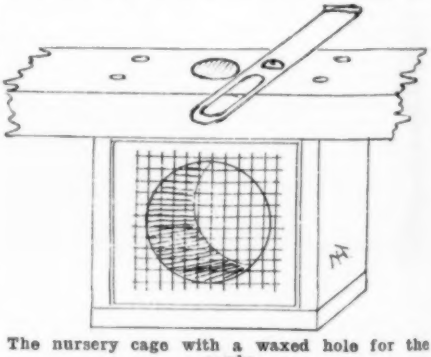
Wounded and Gassed, Captain Turner Recovers Health Through the Use of Honey

Since 1919 I have been engaged in queen breeding and I find the work more fascinating each year. For some years I was almost entirely incapacitated as a result of wounds received in the war, but now, thanks to beekeeping and honey, I am entirely recovered.

I became a beekeeper mainly through having a fight with a German airman in March, 1918, five miles over their lines. He killed my observer and got me through the lung before a lucky burst from my machine gun sent him spinning to earth in flames. My machine crashed between the lines and I took refuge in a shell hole that was unfortunately full of gas, not too pleasant a spot for a man with a hole through his lung. They got me in after dark and I was rushed to a hospital, where a doctor in the next cot, who had been badly wounded himself while attending the wounded, took a great interest in my case as I was in such an awful mess. He told me that if I ever wanted to get well, or if I ever had any trouble with throat, lungs or chest, to eat as much honey as I could. I took his advice and have never regretted it, being, as stated above, quite myself again, though I can not stand town life or being indoors. I began beekeeping, very fearfully (it was worse than going over the top opening a hive for the first time), in order to provide myself with honey, and now I do nothing else.

Introducing Virgins to Nuclei

The extremely interesting articles on queen rearing by Mr. Mel Pritchard in Gleanings in Bee Culture early in 1932 have prompted me to describe details of a method of introducing virgins to nuclei which has proved very satisfactory. The entire procedure outlined by Mr. Pitchard has been adopted by me with great success and it is only in the method of introduction that I have departed in any way from it. After experimenting with every method that I could hear of or improvise, I have reached the conclusion that there is no other plan which gives such good results. Also, after trying both cell and virgin introduction thoroughly,



The nursery cage with a waxed hole for the candy.

I am convinced that Mr. Pritchard is absolutely correct in his contention that virgins give by far the best results as regards early mating and quality queens.

I use a nursery cage similar in every way to Mr. Pritchard's except that instead of candy I provision it with slightly diluted honey. This honey is carefully inserted in the little waxed hole in the cage

by means of a pipette (an old time fountain pen filler answers admirably) and it is a very simple matter to fill quite a large number of cages in a very short time. In this way the honey is put nowhere except in its proper place and the young queen does not get daubed with it. It is well known that when a virgin hatches out of the cell she puts her head into the first open cell of honey she comes across and has a good feed. This is exactly what happens in the cage and I find that by using honey the queens will live much longer in the cages if necessary and, moreover, do not crawl back into the empty cell, as the honey satisfies them and there is thus no need for them to seek to eat the dried-up royal jelly. One may thus safely leave the empty cells in the cages until disposition is made of the virgins. When distributing to nuclei, the nursery frame of 24 cages is transferred to a special box provided with a water packet. The water in this is carefuly heated to hive temperature and there is thus considerably less risk of damage to the virgins through chilling. I am convinced that this question of chilling is very important, and that much more damage than we are aware of results to virgins from it. Even on a comparatively mild day the change from the hive temperature to that of the outside air is very considerable and by the time all the virgins are safely in the nuclei quite a lot of damage has probably resulted. I think that it is quite possible that quite a lot of damage has probably resulted. I think that it is quite possible that quite a lot of the mortality among virgins in cages may be attributed to this chilling. Anyhow, my experiences since using the heated box would seem to bear this out.

The virgins are introduced to strong three-comb nuclei on Langstroth shallow frames by means of the nursery cage. The center frame of each nucleus is specially prepared to take the cage and also has a built-in feeder at one end. In the center of the frame a wooden stirrup is fitted,

The cage in place in the nucleus.

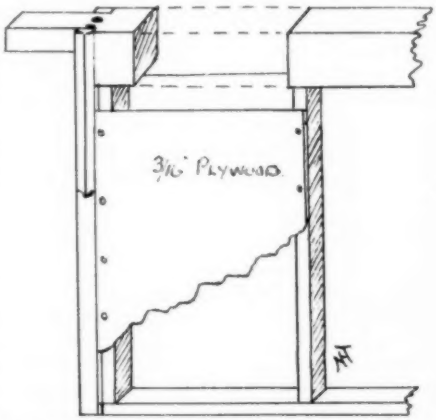
into which the nursery cage is slipped after removal of the empty cell and its holder. Above the stirrup a ⅜" hole is bored through the top-bar and this hole, coinciding with that in the cage beneath, is protected by a piece of excluder zinc turning on a pivot. In my latest frames the excluder is made to slide in a groove,

A corner of Capt. Turner's apiary where he rears his queens.

which is a much better and handier arrangement.

The procedure is as follows: Remove the center frame from the nucleus, shaking a few of the bees off if too crowded, and place it on a comb stand. Then take a cage containing a virgin from the box and remove the empty cell covering the cage hole with a finger to prevent the virgin getting out. Then slip the cage into the stirrup and return the frame to the nucleus. Be certain that the hole on top of the frame is closed by the zinc before inserting the cage. About six hours later the zinc may be turned with the excluder part over the hole and the bees allowed access to the queen. Leave them thus till next day when the excluder is turned away, leaving the queen free to walk out. A few days later another virgin may be introduced, the cage containing the first, now nicely cleaned out by the bees and ready for provisioning again, being pushed out to make room for the new one. The stirrup must always be occupied by a cage or a block of wood the same size or the bees will promptly fill the space with comb. If the first queen is not yet mated, owing to bad weather or other cause, and the second is in consequence likely to be rather longer in the cage, it is a good plan to put half a dozen newly emerged bees of the nucleus in with her, although I have found that these caged virgins are quite all right even after so long a period as ten days. This period is very exceptional, however, and it is rarely necessary to keep a virgin caged for longer than five days at the outside. Occasionally one will die, so that the newly emerged bees are a safeguard against loss as the virgins rarely die when they have bees in the cage with them.

The use of the nursery cage in this way for the introduction of fertile queens to full sized colonies is also highly successful, no losses having yet occurred in my experience, and I now use it exclusively. It is really a variation of the Chantray method for when the bees are admitted through the excluder they busy themselves in cleaning out the honey in the waxed hole and are afterwards inclined to groom the queen and treat her as their own without any further trouble. If the introducing frame is placed in the center of the colony with the little excluder beneath the feed hole in the inner cover, it is an easy matter for the beekeeper to manipulate the zinc with the aid of a piece of stiff wire through the feed hole without using smoke or disturbing the bees in any way. This goes a long way towards success and is much safer than the ordinary method since the beekeeper controls the cage and may let the bees in and the queen out at his own convenience, and according to his judgment of the most favorable moment. The adoption of this method for nucleus introduction resulted in my being able almost to double the output capacity of my nuclei since it makes it possible to have a virgin ready to replace the laying queen very soon after



The feeder is built into the frame by means of two strips of wood the same width as the bottom-bar.

the latter's removal. And as this virgin is old enough to take her mating flight, and what is more, is very anxious to do so after her long confinement, there is a minimum of delay in again having a laying queen in the nucleus. Apart from the advantage of having queens mated quicker, no mean one in commercial work, there is the added advantage that more bees are hatching in the nuclei and it becomes possible to use these surplus bees either to form more nuclei or to help build up other colonies which may require a little boosting. Usually it is not possible to obtain more than five first-class laying queens per nucleus per season in the ordinary way, but with this method I was able last year to have eight or nine perfect beauties from each. In one instance I removed the laying queen from a nucleus, released the caged virgin three hours later, and next day saw her return from her flight when I was going round introducing new virgins.

The photograph and diagrams herewith

clearly show the construction of the stirrup and the feeder. The latter is built into the frame by means of two strips of wood the same width as the bottom-bar. One is fitted next to the end-bar and the other about two inches from it and secured with long thin nails. Two pieces of thin plywood are then nailed on to the edges of the strips and the bottom-bar, the feeder then being the exact width of the comb. For filling the feeder another hole may be bored through the top-bar over it to take a funnel or, better, the top-bar between the uprights may be sawn away entirely so that syrup may be poured in quite easily. When completed, the feeder end is immersed in hot beeswax.

Coryton, Devon., England.

Florida Honey

E. R. Root

The Largest Honey Exhibit Ever Held in the United States

There has been an impression more or less prevalent in the North, that while Florida ranks high in its winter climate, fruits and vegetables, it stands low in the quantity and quality of its honey. This is a mistake. After having been all over the state a number of times in years gone by, and after having been in the vicinity of Tampa for six weeks this winter, I can say that Florida has a wider variety of good table honeys than most states, either South or North. There are some states that have perhaps a wider range of honeys, but those honeys are not what we of the North would call table honeys. With one or two exceptions, all of the Florida honeys can be used on the table. They do not cloy the appetite. They "wear well," as Mrs. Root and I can testify after six weeks of keeping house here in the vicinity of Tampa. I am told there are 1200 beekeepers in this vicinity, not to mention beekeepers in the northern and southern portions of the state. As most of the honey here is consumed within the state, it is difficult to get at the amount produced. I know one beekeeper who harvested an average of over 400 pounds per colony, and most of that honey was of good table quality.

Other Southern Honeys

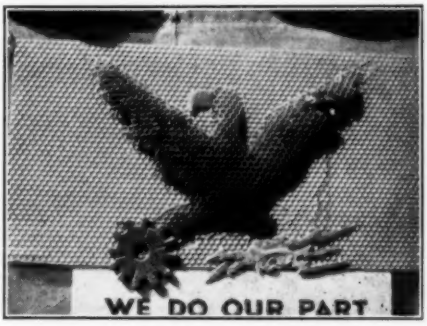
Among northern beekeepers there seems to be a prejudice against southern honeys, principally because they are dark.

After eating sourwood and poplar honey of the Virginias and the Carolinas, gallberry of Georgia, tupelo, orange and palmettoes of Florida, both of us have decided that they are good—they wear well. The flavor of these honeys may not be so delicate as some of the northern honeys, but they are of a kind that the South likes. It is evident that tourists enjoy them likewise.

These southern honeys are of such a body and flavor that they are almost entirely consumed in the states where they are produced. It is doubtful if a nice western alfalfa or sweet clover could crowd into this southern territory because they are so different. The South is not used to them. It is unlikely that a southern honey would be accepted in the West and for the same reasons. It is well that each territory prefers its own product.

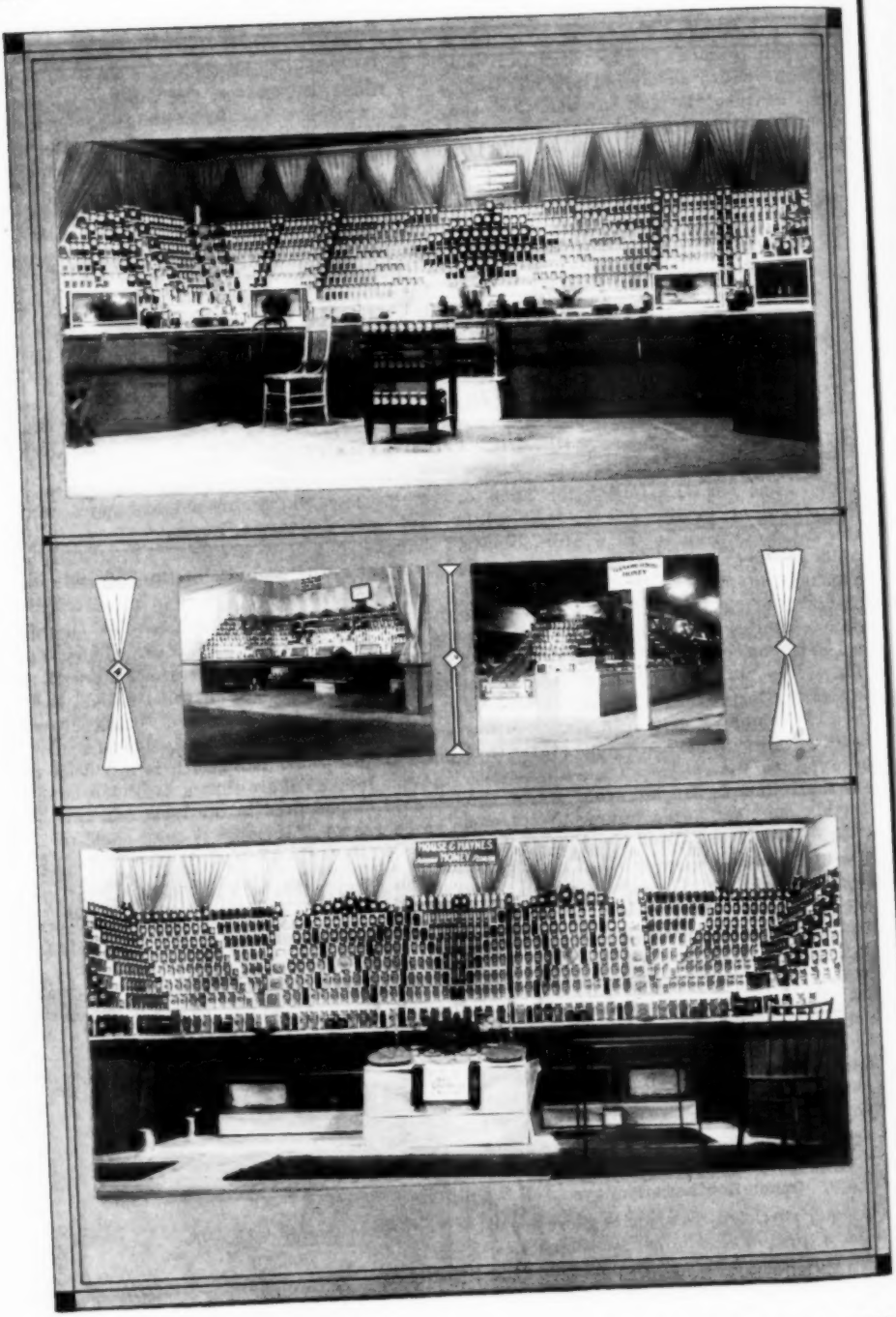
The Florida State Fair Honey Exhibit

Some idea of this growing industry was reflected in the Florida State Fair held at



Detail of Lundin exhibit. A very clever piece of comb building that brings out the blue eagle.

Tampa in February. From the standpoint of size, variety and general novelty,



Top—The Lundin display, which took first premium. Left center—E. F. Parker's exhibit. Right center, Florida Honey Distributors' exhibit occupying the center of the building. Bottom—House & Haynes' exhibit, which took second premium. The lighting effects in all of these exhibits were very fine.

the Florida exhibit of honey and bee products for 1934 excelled anything that I have seen in the United States at any fair or elsewhere. In all, there were on display nearly 20,000 bottles of honey of all shapes and sizes, occupying a large part

This difficult piece of work showing enlarged bees was done by Harold Struthers. Exhibited by Florida Honey Distributors.

of the building. Perhaps no state in the Union could furnish as many shades of honey. It was the first instance in all my experience where I have seen in a honey exhibit color brought out so well. This was enhanced by a background of electric lighting softened down by a semi-transparent paper.

The display as a whole consisted of several exhibits down through the center of the building. On either side were special booths where honey, bees, and beeswax were shown. The exhibits on the two sides of the building attracted the most attention because they were better lighted.

It should be explained that it is impossible for pictures to show the lighting effects that brought out so beautifully the colors of different honeys in the various exhibits.

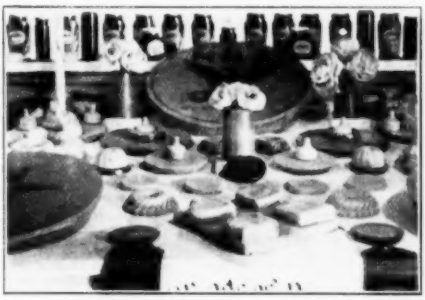
Taking it all in all, the Florida honey exhibit was one of the big attractions at the big fair. Everyone was talking about it. As thousands of tourists visited this Fair, it was good advertising for all honey throughout the United States.

No little credit is due the management of the Fair for the generous space allotted to honey, and for the size of the cash premiums that caused the beekeepers who participated to do their best.

Much Credit Due R. E. Foster

Credit is due also to R. E. Foster, State Bee Inspector, and likewise superintendent of this exhibit. As a state bee inspector, Mr. Foster has done his work so well in cleaning up foulbrood, that Florida today, with all its bees, has the unique distinction of being the cleanest from disease of any state in the Union. Dr. Wilmon Newell, Dean of the Agricultural Department of the State University, at Gainesville, Florida, was the first to advocate and carry into effect the complete destruction of bees, hives, honey and all. Mr. Foster, acting under him and this policy, has made good in spite of the fact that foulbrood can wreak havoc among the bees every month in the year in Florida.

I might add that Mrs. Root and I are spending the winter here in Florida. We came here because of the urgent appeal of our children and associates who felt that we should do as A. I. Root did—come to Florida to prolong life. There is no doubt that my father lived twenty years



Detail of exhibit in House & Haynes' display. A very pretty collection of wax cakes and wax flowers.

longer than he would have had he remained in the North.

We are living very comfortably down here, and yet the cost of food is so much less than in the North that we can live cheaper here than at home. We have been living in two large rooms, one a sleeping room with two single beds, a dinette and a kitchenette, and a bathroom, at such a reasonable rent that it does not cost us as much to live here as it does to live at home.

Fruit and vegetables are all fresh and at prices that are unbelievably low. Even good meats, and especially fish, are much lower than in the North.

Florida is having a boom right now, but that is another chapter.

Bees Must Have Pollen

C. L. Farrar

Associated Apiculturist, Bureau of Entomology[1], United States Department of Agriculture.

The Question of Pollen Reserves Has Great Significance in Wintering Bees

Wintering practices are usually based upon the theory that brood rearing during the inactive season is abnormal and is a mark of poor wintering. The writer observed, during several years' experiments on wintering at the Massachusetts State College, that apparently normal and superior colonies reared considerable brood as early as the latter part of January, and that brood rearing once started continued as long as pollen was available. Upon taking up work at Laramie, Wyoming, he made similar observations.

Huber[2] first showed that pollen is indispensable to the rearing of brood. Langstroth[3] verified Huber's experiments and gave special emphasis to its practical value. During recent years a large amount of work has been done on its collection and utilization. Pollen has been recognized as essential to a colony; yet it has been taken for granted that the bees will collect pollen as needed. Dearths of pollen during the active season have prompted beekeepers to search for pollen substitutes, but little progress has been made in this direction. Haydak[4], who has made the most recent comprehensive study of pollen substitutes, was able to rear a fair number of apparently normal bees when dried yeast, milk, or eggs (particularly the yolks) were fed. He also recommended fresh whole milk, but his experimental results do not indicate that any of these substances can take the place of pollen as completely as cane-sugar syrup can replace honey. Where large pollen reserves have been stored by colonies, the concern of commercial beekeepers has been how to free pollen-clogged combs.

Since brood-rearing during the winter has been considered abnormal, and since we have had no adequate means of measuring the quantity of pollen consumed by a colony, the possibility that pollen might be beneficial to the wintering of bees has been entirely overlooked. Experiments of Wilson and Roe[5] gave no indication that pollen is in any way responsible for dysentery in overwintering bees, thus disproving one possibility that pollen might be harmful to adult bees during the winter.

Experiments in Control of Pollen Supply

Experiments on the control of the pollen supply begun at the Intermountain Bee Culture Field Laboratory during the summer of 1932 suggest a new viewpoint to the wintering problem. Failure to control this factor may explain the variation in results obtained by previous investigators of wintering methods.

Ten hives containing 20 combs each were prepared for the test colonies, and divided into five groups of duplicates. One group was given only stored sugar syrup; the second, honey with only such pollen as might be suspended in the honey; the third, honey and two quarts (45 ounces) of pollen; the fourth, honey and 163-170 square inches of cells containing pollen[6]; and the fifth, honey and 615-626 square inches of cells containing pollen.

Each of the colonies in the second and third groups had 10 frames of sealed honey in newly drawn combs and 10 of dark brood with sugar syrup made from 12 pounds of sugar. The dark brood combs in the third group were filled with the specified quantity of bulk pollen (except for the centers of the five middle combs), and a part of the sugar syrup was poured over the pollen to prevent the bees from throwing it out. The bees packed this pollen into the cells so that the combs had a normal appearance. Where new combs of honey were provided, they were placed on each side of five dark combs in both the first and the second stories of the

[1]The Intermountain Bee Culture Field Laboratory is located at Laramie, Wyoming, and is maintained co-operatively by the University of Wyoming and the United States Department of Agriculture, Bureau of Entomology.

[2]Huber, F. 1814. New Observations upon Bees. Translation by C. P. Dadant, 1926, pp. 120-122. Hamilton, Ill.

[3]Langstroth, L. L. 1876. Hive and Honey Bees. Ed. 4. pp. 80-87. Philadelphia.

[4]**Haydak, M. H. 1933. Der Nahrwert von Pollenersatzstoffen bei Bienen. Arch. Bienenk. 14: 185-219.**

[5]Wilson, H. F., and Roe, C. W. Relation of Pollen to Dysentery. Gleanings Bee Cult. 57: 704-706. 1929.

[6]The number of square inches of cells containing pollen is not an accurate quantitative measure, but it seems to be a fair standard for comparative purposes.

hive, since it is known that bees are reluctant to cluster on new combs.

Pollen Guards Used on Hives

The combs containing sugar syrup were prepared by two reserve colonies equipped with pollen guards. The pollen guard was placed at the hive entrance to prevent the bees from carrying the pollen inside. It consisted of two vertical metal shields, each perforated with two horizontal rows of 44 $\frac{3}{16}$-inch holes, large enough to permit the passage of bees, but small enough to remove most of the pollen pellets that they carried. The second shield removed any pellets that were only loosened by the first. A collar was placed between the bottom-board and the hive body to allow space for the pollen guard and a tray for collecting the pollen. A piece of steel screening provided the bees footing while crawling through the holes and allowed the pellets to drop into the metal tray below. A storm shield of wood and asphalt roofing prevented rain from beating into the tray. With these guards a total of five quarts of pollen was removed from two colonies during the first three weeks of September, 1933. Either more holes or a guard at each end of the hive might be advantageous for strong colonies under some conditions.

On October 12 the population of 10 Italian colonies was determined and the prepared combs substituted for their original combs. The 10 colonies were thus divided into five groups of duplicates according to the content of the combs they received. These colonies had previously been isolated from each other. The Italian queens in the first three groups were exchanged for Caucasian queens in order that in the spring the bees that emerged during the winter might be distinguished from the overwintering bees by their color. The colonies were then prepared for winter by placing shallow supers containing dry shavings between the inner and outer covers of the hives and by wrapping the hives with a layer of building paper and one of tar paper. All colonies were adequately protected by a windbreak.

The colonies were examined on April 18, 1933. A definite relation between the size of the colony and the quantity of pollen provided in the fall was apparent. The smallest colony had less than a quart of bees. This colony was wintered on sugar syrup alone, whereas colonies receiving more than 600 square inches of pollen had compact clusters covering the 10 upper combs and extending to the lower combs. All 10 colonies had eggs and hatching larvae, and those given a reserve of pollen in the fall had some sealed brood and a few intermediate-staged larvae. The brood nests indicated that all the colonies had exhausted their reserve of pollen some time during the previous week or so. Of the colonies that had their Italian queens replaced with Caucasians, those on sugar syrup alone and one on honey alone had no Caucasian bees and the other colony on honey had possibly five per cent of Caucasians. In colonies receiving two quarts of pollen 50 per cent or more of the bees were Caucasians.

All the colonies were apparently without pollen from just prior to April 18 until about May 20, when new pollen became available. On May 17 the hive wrappings were permanently removed and the population, stores consumed, and number of Caucasian bees in each colony were determined. Since the Caucasian bees present in the fall emerged prior to Au-

TABLE 1—Data on wintering of bees with varying quantities of pollen reserve.

Group	Pollen reserve	Stores	Total population Fall No.	Total population Spring No.	Difference Pct.	Caucasian bees xFall No.	Caucasian bees Spring No.	Stores consumed Lbs.	Stores consumed Oz.
1	None	Sugar syrup	(23,920	*	100	None	None	26	8
			(23,820	10,410	56.3	159	do.	23	6
					Av. 78.2			Av. 24	15
2	None	Honey and sugar syrup	(28,830	12,930	55.1	127	924	35	2
			(27,660	3,330	87.9	615	None	21	14
					Av. 71.5			**Av. 28**	8
3	2 quarts (45 oz.)	do.	(34,940	17,690	49.4	2,869	9,000	38	2
			(28,560	18,470	35.3	5,808	10,150	41	4
					Av. 42.4			Av. 39	11
4	(170 sq. in.	Honey	(27,720	13,380	51.7	Race not changed		38	9
	(163 sq. in.	do.	(39,190	23,440	40.2	do.		47	15
					Av. 45.9			**Av. 43**	4
5	(626 sq. in.	do.	(24,950	23,750	4.8	do.		42	15
	(615 sq. in.	do.	(28,720	26,450	7.9	do.		56	6
					Av. 6.4			Av. 49	10

xAll the Caucasian bees present in the fall emerged prior to August 23.
*On April 18 there was less than a quart of bees, including a queen and eggs.

gust 23, it is unlikely that many of them remained on May 17. It may be assumed that those present at this time had emerged during the winter. Table 1 summarizes the results.

The data strongly suggest a marked advantage to colonies proportional to the quantity of pollen reserve provided. This pollen was used in developing young bees during the inactive season. The honey consumed was roughly proportional to the amount of brood reared. Since even colonies provided with the maximum quantity of pollen had exhausted their reserve prior to April 18, still greater reserves may be found beneficial in localities, similar to Laramie, that have long inactive seasons. Furthermore, a moderate reserve pollen provided in the fall supplemented by a second reserve added about six weeks prior to the collection of new pollen may prove to be of greater value in obtaining colonies of maximum strength at the beginning of the active season. Experiments are now under way in which both the quantity of pollen and the time at which it is made available are being studied.

Alfonsus[7], of the University of Wisconsin, states that the average quantity of pollen required for the development of a bee is 0.1449 gram. On this basis 45 ounces of pollen should produce approximately 8900 bees. In Table 1 we find one of the colonies in group 3 with 9000 Caucasian bees and the other with 10,150. This comparison seems significant, although pollen varies so greatly in weight that it should be reduced to a dry weight for such comparisons.

Methods of Accumulating Reserve Pollen

In many localities colonies collect, at certain periods, an excess of pollen above that required for immediate use. If such pollen is concentrated above the brood nest during a honey flow the bees will cover it with honey and seal the cells, thus preventing the pollen from drying out or being attacked by molds. Colonies in which brood rearing is interrupted by the loss of the queen accumulate more pollen than do normal colonies. The placing of a set of empty combs next to the bottom board and below the brood nest appears to increase the quantity accumulated, particularly if these are dark brood combs. Where there is no danger of spreading disease, excess pollen may be distributed to other colonies.

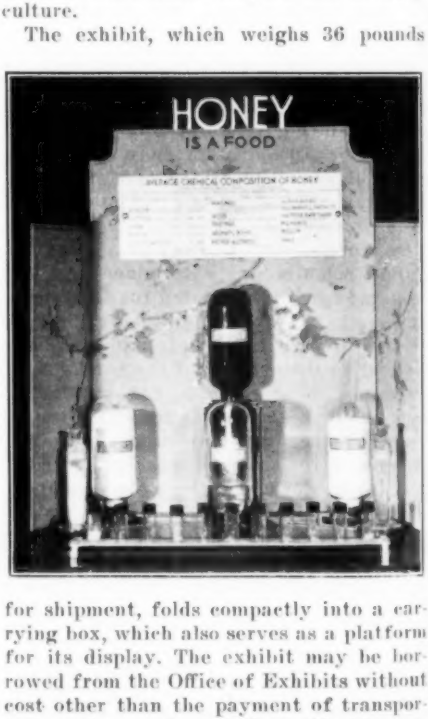
Colonies vary greatly in the quantity of reserve pollen stored. The reserve present on October 6, 1932, in a series of 12 colonies maintained under the same conditions at the same locality ranged from 24 to 224 square inches. There is still greater variation between colonies in different localities. Colonies on the University of Wyoming campus had from no reserve to a negligible amount in 1933, while those 17 miles away had a large reserve.

Laramie, Wyo.

[7]Alfonsus, E. C. Zum Pollenverbrauch des Bienenvolkes. Arch. Bienenk. 14:220-223. 1933.

Government Honey Exhibit

The accompanying photograph is of a new "Honey Exhibit" illustrating the chemical components of honey which has just been completed by the Office of Exhibits, United States Department of Agriculture.



The exhibit, which weighs 36 pounds for shipment, folds compactly into a carrying box, which also serves as a platform for its display. The exhibit may be borrowed from the Office of Exhibits without cost other than the payment of transportation charges to and from Washington. In requesting the exhibit complete shipping data must be submitted, such as, the name, address of the borrower, together with the date of the meeting for which it is desired. The borrower must also agree to bear the shipping charges both ways. —Jas. I. Hambleton, Bureau of Entomology, Washington, D. C.

From the Field of Experience

A TRICK IN TRANSFERRING

Inducing Queen to Leave Old Hive and Establish Brood-nest in New

The method of transferring which I use may well be termed that of "supering the bees up" from old gums, box hives or whatever may have been their earlier habitation. This plan consists of decoying the queen up from the old brood-nest into a brood-nest with open brood which is added above.

This requires the use of a queenless colony to which is given frames of open brood, or of a colony from which the queen has been removed. This colony is then placed on top of the old hive and left there until the queen has established her brood-nest in the upper chamber. At this time a queen-excluder or an escape-board in which has been set a sheet of excluder is placed in position to retain the queen within the top body. When this transfer is in preparation, it is necessary either to fit suitable boards or plaster to close all openings between the outer walls of old and new hives, also to give suitable opening in the top chamber to permit the free flight of the bees therefrom.

As young bees in the old hive continue to emerge and to enter the upper chamber with the queen, the old hive will be robbed of most if not all honey, especially if the transfer is made before the honey flow has started.

In case the transfer is attempted during a honey flow it is sometimes well to examine the old hive for queen cells about ten days after the transfer was made. If a young queen should emerge below, the old queen may be removed and the young queen may then be permitted to occupy the entire run of the hive until she is found above, at which time the excluder may again be placed in position to retain her within the top chamber. This method has the appearance of considerable complication but in reality it is not as complicated as it may seem.

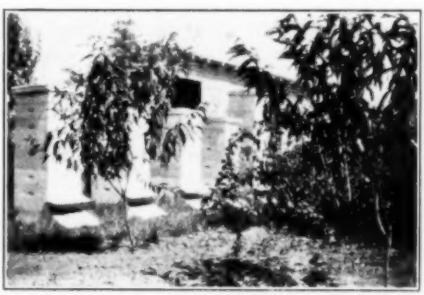
By a modified use of this plan I have transferred bees from the walls of buildings, from trees, and other quite inaccessible places without great difficulty.—J. H. Sturtevant, St. Paul, Nebraska.

THIS BEGINNER MAKES GOOD

Mr. Brown Believes in Providing Ample Stores and Adequate Protection

I promised to let you know how I got along with the two packages of bees I purchased in the early spring of 1931. I hardly know where to start, but will say it looks as though I may be a beekeeper yet. We didn't take off much honey the first season for two very good reasons: because it was a very poor season, and it rained every day during the sourwood bloom. We increased the two packages to five strong colonies. Every colony stored a shallow super of honey which we left for winter stores. We packed our bees well that fall and they surely came through the winter in fine condition.

No. 1.—After the packing was removed in April.



No. 2.—The same colonies after the sourwood honey flow.

Picture No. 1 shows the hives after the packing was removed the middle of April. No. 2 shows them at the end of the sourwood honey flow. No. 3 is the champion colony which filled three large and four small supers. All five colonies swarm-

ed and we now have ten hives which appear to be in good condition.

If I could stop swarming I am sure I would get more honey. I suppose the extremely warm weather of January and February caused the trouble. When I removed the packing and examined some of these colonies about the middle of April

No. 3.—The champion colony.

they were chockfull of bees. One colony especially was badly crowded and it swarmed about the 20th of April in spite of all my efforts to prevent it.

Well, anyway, we like the bees and love that good sourwood honey. We sold all we could spare and every one wanted more. We are going to be beekeepers and we intend to keep on learning. I feel that what little success we have had is due to our using good bees and equipment, following instructions carefully and reading bee journals.—S. F. Brown, Erwin, Tenn.

[By taking away the supers of honey instead of leaving them with the bees for winter stores, the chances are the bees would not have been so prosperous the following spring.—Editor.]

GETTING THE QUEEN ALSO

Enticing the Bees and Queen to Come Out of a Tree

Bore a hole, an inch or larger, in the back of an old hive and put it up against the hole in the tree where bees are going in and out, making it tight so the bees will have to work out through the hive. See that there is one comb of open honey and three or four empty combs in the hive to start the bees working. After they have gotten used to working through the hive and they have accepted it as part of their home, give them one frame of brood (unsealed brood so the bees will take care of it) and two frames of open honey, one frame on each side of the brood frame. Then fill the hive with the usual number of frames with empty combs. Put a small amount of sugar water in the frames next to the hive walls. The queen, being envious of foreign brood will come out of the tree and lay eggs with the other brood. Watch for her mornings and when you catch her out put a queen excluder over the rear hole in the hive and leave it there for 21 days until any brood in the tree will have a chance to hatch. I have tried this several times and it has proven very satisfactory. The closer you can get your hive to the brood chamber in the tree the better and quicker results you will have.—R. A. Fowler, Salinas, California.

A GOOD RECORD FOR A MAVERICK

It Pays to Give a Swarm of Bees a Good Home

One of my neighbors caught a stray swarm of bees during the summer of 1932, and put them in a box. It was a late small swarm, so stored little honey. About the first of April I examined them and found them short of stores. I told my neighbor I would furnish the hive and do the work for the bees and half of the surplus honey.

When I opened the box, which was about the size of an eight-frame hive, I found it half full of comb, about a pound of bees and a little patch of brood in three of the combs. I transferred the bees to a hive, fitted the comb that contained brood into two frames, filled out the hive with empty combs, gave them ten pounds of sugar syrup and they started to work. Later I gave them another ten pounds of syrup.

Last fall we took off 164 sections of fancy comb honey. The little stray swarm had made more clear profit than any cow on the ranch.—J. H. Lutes, Stapleton, Nebraska.

SPINSTER JANE SAYS—

Last winter being so long and cold—it lasted well into April here in the North—we women folk were pestered to death with the men folk hanging about the kitchen, at every opportunity, and it was really funny to hear the masculine opinion, freely expressed, on many questions.

We learned man's opinion of women, for instance, and our shortcomings were dwelt upon at great length. Summed up, these were our worst faults: We had sharp tongues; were born gossips; were overmuch inquisitive; always wanted the last word; were fickle; wanted to be supreme ruler in the home.

I felt like marching out and exclaiming, "Go to the honeybee, thou grumbler, consider her ways and be wise!"

Worker bees are smaller than drones, so naturally the more important members of the hive are supplied by nature with weapons of defense—stingers.

With humans, man thinks he should dominate. Ten to one he uses his greater brute strength in reducing his weaker helpmeet to submission to his many whims. What's more natural than that she should use the only effective weapon at her disposal—her tongue?

Are we more inquisitive than males? Say! Just hint at some secret to your husband and see who is inquisitive then! You won't be given a moment's rest until you share that secret. This virtually means it will be no longer a secret. It is quite all right. Bees are inquisitive too. They poke and pry into everything in search of enemies, friends, and nectar. It is the God-given instinct in both bees and women by which we acquire knowledge of the world, its people, and life in general.

As to gossping, well! The gang of workmen in a nearby construction gang this spring beat all the women in existence for gossip. Everybody, and everybody's reputation suffered to their (the men's) great edification.

Bees always have the last word in an argument. If one alone can not come out best, she calls on her sisters for aid. Isn't it natural, too, in women? When a "superior" male blurts out "I told you so!" the last word isn't enough. Like Maggie, we ask for a rolling-pin.

Bees are fickle and so are women. Temperamental, so Hollywood terms it. Isn't it a woman's privilege to change her mind? Anyway, that is what flappers have discovered to be their greatest asset. They like to keep an admirer guessing, and it generally works. Wives, wake up! A woman "subject to change without notice" is more apt to hold her man than the tiresomely one-way woman whose husband knows her every thought beforehand.

Do we want to rule in the house? We most certainly do in our own domain. Do the worker bees not rule? Who wants a male messing all over the house, giving orders about things he knows nothing about? That's the masculine attitude about everything anyway. "Man is supreme" in his own estimation.

Again we repeat, with all due apologies to Solomon for correcting his mistake, "Go to the honeybee, thou grumbler, consider her ways and be wise."—Spinster Jane.

That Burning Shame Again

Gleanings has been getting all sorts of reactions since the publication of the editorial in the April issue on the "Burning Shame." Apparently there are two sides to this question. Those favoring the burning are for the most part cattle men who claim that the grass is improved for the season that follows and that all other growth is cleaned off.

There is no question about the last statement. The palmettoes and the gallberry, two important sources of honey in the southland, are leveled to the ground and, of course, are of no use to the beekeeper for that season and sometimes for the next. On the other hand, some beekeepers are of the opinion that the palmettoes and the gallberry are better for honey production the second season after the burning. Be that as it may, the burning wipes out the young timber for all time to come. It injures the timber of larger growth that does not succumb to the fires. It burns up birds' nests as well as young birds. It has been estimated by those who know that without birds noxious insects would increase at such a rapid rate as to destroy all vegetation, without which man could not long exist. Whether true or not, the possibilities are so appalling that we can not afford to take chances.

Admitting that there are in some cases justifiable reasons for burning, it should never be allowed except under federal or state control. Permits should come only from those in authority and in a position to know whether the fires would be bene-

ficial and whether they could be held under control.

A case in point has come to my knowledge, and it is only one of thousands of others like it. Last year a beekeeper had some 60 colonies on land belonging to another. The owner had a small orange grove, turkeys and chickens. Both the bee man and the owner of the turkey farm did well last year on river bottom land with its growth of palmettoes, gallberry, and goldenrod.

This year some cattle men set fire to the brush on land near by. The fire burned over the whole area including the land owned by the turkey man. The fire wiped out the turkey nests, burned the turkeys, old and young, ruined his fruit and almost took away his home, and, of course, burned to the level of the ground all that good bee pasturage. The bee man, while he secured a good crop of orange honey, will get no palmetto, gallberry, or goldenrod honey. The latter he relied on for his winter stores.

I asked the bee man why he and the turkey man did not put in a claim for damages. He shook his head, "The cattle man said he didn't know his men were going to burn over the land and doubt if we could recover if we brought suit. The cattle man has more money to fight than we have."

Has it got to the point where the little man with little money can be beaten in the courts by the big man with lots of money? You say it is a burning shame, and so say I.

I am down here in the Southland to become better acquainted with the bee men here. I see wonderful opportunites for the keeping of bees, turkeys, chickens and the like in all of the South. I shall continue to raise my voice and pen against this burning shame that is not confined to one state only in the sunny South.—E. R. Root, Dunedin, Florida.

COMMENTS ON CURRENT ITEMS

Mr. Pettit calls our Niagara district the "Florida of Canada." It is the home of the peach, grape, apricot, and other fruits. We are about 625 feet above sea level and the thermometer seldom reaches zero. Some beekeepers give their bees no protection other than placing them close up against the east side of a building. As nearly all of these beekeepers are comb-honey producers their bees are usually well provided with winter stores. During a normal winter their bees come through with small losses.

In March the thermometer dropped to 30 below zero. Bees unpacked in sheltered locations fared badly. The losses are probably 75 per cent or more. Those who packed their bees last fall certainly have their innings.

I was much interested in Mr. E. R. Root's write-up of Geo. S. Demuth. Nearly every year we met Mr. Demuth at our Ontario Beekeepers' Association convention at Toronto and it is hard to think we shall never in this world see him again. To sit beside him between the sessions and enjoy listening to his finely modulated voice and brilliant though practical conversation was to me a benediction. It is not too much to say we all loved him. Might I be permitted to ask Mr. Root to tell us more about Mr. Demuth and his work?

I note what Mr. Byer has to say regarding advance in the price of packages. An increase of 75 per cent is certainly a big boost but when we consider the ridiculously low price of $1.45 for a 2-pound package and queen it looked like ruinous competition and if so, the shippers were very likely selling their product below the cost of production.

We have an apiary in an orchard where there is shade part of the day. We have made a practice of working in the sunny part until about ten o'clock, then when "Old Sol" gets too warm we work in the shade. We never noticed any marked difference in the temper of the bees except that at the edge of the apiary next to the shade the bees were always crosser. We attributed this to the temper of the colonies. Next summer we will exchange the positions of those colonies in the shade with those in the sun to see if it makes any difference.

When I first started using the food-chamber I kept it on top of all the supers. For a number of years I have left the food-chamber on top of the brood chamber and placed the queen excluder on top of the food-chamber allowing the queen to use it as an auxiliary brood chamber. At the approach of fall there would be little brood in the shallow super and most of the combs filled with honey. If there were not enough combs well filled I supplied them in fall from the same hive.—J. F. Dunn, Ridgeway, Ontario.

From North, East, West and South

SOUTHERN CALIFORNIA. — March passed without that wished-for rain. Many colonies not overly strong in bees were moved to the orange groves. The prospects for a crop of orange honey in southern California are not encouraging. We will get a crop, but perhaps not over one-third of a normal yield. If the beekeeper with orange honey on the hives could extract it all with the assurance that his bees would gather enough from other sources to fill the hives for winter, the picture would be much brighter. The experienced beekeeper will hesitate to take from his colonies beyond the point of safety, in case there is no other honey flow this season.

Prospects for Honey None Too Good. Wax and Honey Prices Strengthening.

Our chances of getting enough rain to do much good are very slim. Reports from the black sage ranges which were fortunate enough to get a freak rain of some seven inches, indicate the bees are as well off as those that were moved to the orange.

The Imperial, Palo Verde and Coachella valleys which depend almost entirely on irrigation should produce an average crop.

There has been an active demand for honey, especially the darker grades such as wild buckwheat and alfalfa. The price has advanced some. There is little of the old crop in the hands of the producer. Those who have honey feel that there is little probability of the price going down. That we are in for a short crop no one doubts for a moment but just how short we can not foretell at this time.

The demand for beeswax is also active at advanced prices. We never get alarmed over the price of wax as it will keep indefinitely and it often brings a good price when money is most needed.—L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA. — Beekeepers are busy with their first extracting, and every day one or more reports of crops which show a spotted condition come into the State Association office. Averaged, they amount to just half of what the beekeepers expected in the first extracting. This is really pretty good.

Some parts of the north have had good rains. This is encouraging to beekeepers in the star thistle district. In fact, increase was greatly interfered with by the rain the last weeks of March. Rumors are afloat that beekeepers are quitting the business. This caused us to make some efforts to ascertain facts and we are convinced there are no grounds for the rumor. In fact, we found beekeepers greatly encouraged and commencing the season with a determination to recover some of the losses of the past two or three years.

During the past few weeks several of our largest producers have been in the market to purchase more bees. Few bees are selling, but small lots may be found and prices offered are very satisfactory. Prices for honey remain about the same. There is very little old honey in the hands of beekeepers. The few who are still holding their honey are not anxious to sell.

The beekeepers of the five states represented by the United States Pacific Coast Laboratory are disappointed by the letting out of E. L. Sechrist who has been successful in making a fine record for the station in the short time it has been in operation. In fact, his organization and planning of the work has been so well done that the work will go right on after he leaves in July, when Prof. Vansell and Frank E. Todd will be in charge. Both are first-class research workers.

An interview with our leading dealers in bee supplies shows greatly increased sales over the same period last year. County associations which hold regular monthly meetings report good attendance and increasing membership.

Queen and package bee producers are organized and living up to their code for fair dealing. They report orders coming in at a satisfactory rate. Organized prices have a tendency to encourage more extensive buying. Bees in the orchards have built up so rapidly that most of the dealers are fairly well supplied with stock for the opening season. From now on bees will increase rapidly.

George S. Demuth—your memory will always be an inspiration to all of us.—Cary W. Hartman, Oakland, California.

MANITOBA.—The invitation to supply these notes comes to me with a new signature, also with the announcement of the passing of our good friend, Geo. S. Demuth. All those who are interested in our industry will regret the loss—I have never heard anyone speak anything but well of him.

As I write these notes, spring is with us. Coming on the wings of the south wind we have changed quickly from zero temperatures and big snowbanks to bright sunshine with little or no frost.

Package bees are beginning to arrive. The N. R. A. codes are pretty generally accepted, although buyers of small orders are squirming. They should exert themselves to get into clubs or associations rather than spend the time in scolding.

The purchase of package bees seems to have been slipping into the hands of big business in late years and it is from that source that the greatest complaint comes. The buyer has one big question this year and that is, with the increased price, will those queens that come with the packages be in a condition to produce better results or will they be just a little poorer than last year? The queen part of the business is far from perfection and some research worker in the future should be able to make himself famous by shedding some new light on this problem.

Another difficulty facing the southern shipper is the arrival of a truck for a load of bees at any time which may upset carefully prepared schedules of work. The pros and cons of such trips are pretty carefully considered and only the most daring will attempt them.

The Dry Queen Cage Method of Sending Queens with Packages Appears to Have Merit.

This spring (if inquiries are any indication) will see a change to queens in empty cages without attendants. These are introduced by first removing the metal end piece from the cage and pressing a little granulated honey in the hole. The bees quickly remove this honey and the operator can be so sure of this that he need not examine for several days. This is a quick and sure way of introducing.

Reports from wintering so far are much better than last year as we had no honeydew to poison the bees.—L. T. Floyd, Winnipeg, Manitoba.

NORTH DAKOTA.—Rainfall which has been fairly general over the state of late has added much needed moisture to the soil and settled dust storms which were assuming rather serious proportions. It has improved the prospects for honey plants, but much more rain is needed before the soil is in satisfactory condition for the growing plants.

Most of the cellar-wintered colonies have been moved outdoors at this time of writing (April 5) and beekeepers are checking their losses and ordering packages for re-stocking empty hives. Reports received of late would indicate that some of the beekeepers have had rather heavy losses while others have wintered their bees very satisfactorily.

Shallow Food Chambers Prevent Winter Loss.

Starvation has been the usual explanation of the heavier losses. The reports of heaviest loss are mostly from beekeepers who attempted to winter their colonies in single hive bodies of standard depth. Those who winter in the double hives or single hive with shallow food chamber apparently have very little loss. In a recent conversation with a local beekeeper, who seldom has more than 5 per cent winter loss of colonies, he told me that of his 220 hives placed in a cellar last fall, 96 per cent came through the winter nicely. He winters his colonies invariably in single hive bodies with a shallow food chamber of stores placed above.

Colonies wintered outdoors apparently didn't do as well this past winter as those wintered indoors. A few beekeepers, however, have had satisfactory results in outdoor wintering but, in general, it is considered to be more hazardous than a good cellar.

From the present outlook, there are going to be very few unoccupied bee hives this coming season. Some orders have been placed for as early as April 10, but the majority of beekeepers are ordering their packages so that they will arrive during the latter part of April or early May. It will be interesting to compare the results obtained with the earlier packages. Practically all the packages ordered are of the two-pound size.

In connection with the choice of beekeeping locations, beekeepers of this region are becoming more and more careful from year to year to avoid potato-

growing areas because of the common practice of the potato growers in dusting arsenicals. Last year and the preceding year my attention was called to the loss of nearly all of the adult bees in the vicinity of large potato fields from arsenical poison applied in the form of a dust to the plants. According to the experience of the beekeepers suffering these heavy losses in the past, it has usually been noticed that the trouble is more severe in drouth-stricken years than during seasons of normal rainfall. Whole apiaries with colonies strong and showing every promise of giving a good account of themselves in honey production will, within two or three weeks after poison dusting begins, become practically depopulated of bees. Any beekeeper who has had the experience of losing his bees because of arsenical dusting of potatoes will usually choose a new location which is distantly located from potato fields. Many of these potato fields range in size from 100 to 200 or more acres. Calcium arsenate is the usual insectitude used by the potato growers.—J. A. Munro, Fargo, North Dakota.

SASKATCHEWAN. — Word of the death of Mr. Geo. S. Demuth just reached me a few days ago, and I wish to join with Mr. Demuth's legion of friends all through the bee world in extending my heartfelt sympathy to his family. His life must have been an inspiration to those with whom he lived, for his rare courtesy and good humor never seemed to leave him. He maintained the best traditions of such foremost beekeepers as Langstroth and Miller.

Bees are still in the cellars, or in their packing cases outdoors (April 6), and while outdoor wintered colonies are getting frequent flights, there is nothing in bloom yet, and willows and maples will not bloom for two weeks or more.

In spite of an unusually mild winter, bees seem to be coming through in good shape with less loss reported to date than usual. There is plenty of time for spring dwindling, however.

Although our winter has been unusually mild, giving bees frequent opportunities for flights, our spring is not any earlier than usual. The weather still has a chill to it, and water is freezing every night.

Weather prophets have been predicting a wet spring and summer, and we are hoping that it will materialize, because the sweet clover should grow fast enough, in a wet spring so that grasshoppers will not seriously damage it. So far the wet weather has not come, and two days ago we were visited by our first spring dust storm. A twenty-eight-mile-an-hour wind whipped great clouds of soil into the air, darkening the sky, and making everyone feel thoroughly uncomfortable until the following day. I see particles of dirt settling on the paper as I write—another storm is blowing up now.

There is a very heavy demand for package bees this spring, and we estimate that there will be orders placed for from 15 to 25 per cent more packages this year than in 1933.—R. M. Pugh, Regina, Saskatchewan.

TEXAS.—As usual Texas has overdone the weather conditions. On March 1 nearly two inches of rain supplied plants with abundant moisture. The small amount of rain which has fallen since, together with a frost which occurred on the 19th, has delayed the blooming of plants. At the last of the month bees are no farther along and the prospect of a honey flow is no nearer than at the first of the month. All the beekeeper can do is to see that his bees are well supplied with stores and comb space for brood rearing.

Mr. Geo. H. Rea, of Cornell University, Ithaca, New York, spent several days of March in San Antonio and while there he and the writer visited the State Apicultural Laboratory outyard at Dilley, which is under the care of Mr. J. N. Mayes.

A number of localities in southwest Texas which were settled many years ago and where farming was later abandoned because of drouth or erosion, have attracted people within the past ten years to the raising of plums, peaches, grapes, and dewberries. This has proved profitable. In many places this project has become so large that fruit is being shipped by the carload. As the orchards increase in numbers the orchardists are compelled to bring in more bees to insure pollination. As these orchards lie in the horsemint territory the orchardist stands a good chance of producing a honey crop every year.

This is the first spring in ten years that there is no report of honey held over. Several beekeepers report that they have already contracted for their spring honey crop.

In the San Antonio district there have been but three days this winter when the thermometer has fallen below 32 degrees,

30 degrees being the lowest. Quite a number of plants which are annuals are now blooming in the second year. White crown beard *(Verbesina)* which is a large honey plant growing along creeks and in sandy lands in the fall, is still in good bloom. It is very peculiar to find the bees working at this time of the year on Mexican persimmon and on verbesina, the first plant being one of the major spring honey plants and the second the major fall honey plant.

Bees Gradually Passing Into the Hands of Expert Commercial Beekeepers.

Today in Texas the number of beekeepers has decreased very materially, yet the number of colonies of bees in the state is the same or larger than it was two years ago. The small beekeepers are selling out to large concerns who employ apiary managers who know the beekeeping business, and who cut down expenses to make a profit. The prospect for the present year is better than it has been for two years because the man who knows the business is taking his place as the leader of a new industry.—H. B. Parks, San Antonio, Texas.

SOUTH DAKOTA.—April, ordinarily a month of pleasant anticipation for beekeepers, seems to hold less of gladness this year. All beekeepers feel deeply the passing of Geo. S. Demuth, Editor of Gleanings in Bee Culture. His sage comments, decisions and explanations will be missed, all of which emphasizes the inseparable connection between progressive beekeeping and its contemporary journal.

Two inches to a foot of snow fell recently in the Black Hills area. There have been substantial rains in the southeastern corner of the state. Generally, however, moisture conditions are discouraging. The stands of sweet clover are expected to be relatively poor, so we have in prospect a season of considerable migration among the larger producers. However, the old-timers adhere to the theory that it is darkest before dawn, and say in the past that they have experienced a most productive season when it started hopelessly. Much depends on the moisture from now on.

I remember a few years ago when fields of sweet clover, which had not been cut back, grew to be eight feet tall and were so tangled with foliage that it was impossible to ride a horse through them. The ground was musty and wet and the blossoms fairly overflowed with nectar. It was a paradise for bees and it was an easy matter for beekeepers to secure large yields of honey. Alsike and white clover were also abundant in low places. Neither of these clovers are now found in abundance.

Bees have wintered well, but stores have undoubtedly been heavily consumed, due to mild weather. As soon as the first pollen appears, considerable feeding will have to be done.

There is little, if any, of the 1933 honey left and local prices are strong with the demand good.

There is some talk of reviving the South Dakota Beekeepers' Association. A good beekeepers' association would make for organized support of the American Honey Institute and would also help promote local honey sales.—J. F. Norgren, Junius, South Dakota.

WYOMING.—Many parts of the United States have been hit by unusually cold weather this winter while the intermountain states have basked in sunshine. We have had but two cold spells here at Laramie during the entire winter, the coldest temperature being 5° below zero.

Rather general storms during the later part of February and March brought some much needed moisture. A good fall of snow was reported from all mountain regions but the moisture supply is still far below normal.

The warm weather has caused many colonies to be very active and some colonies have died as a result. One of our scale colonies on wintering experiment consumed 51 pounds and 4 ounces of stores from September 24 to February 26. The colony was opened at that time and the bees had starved to death.

It Pays to Strain Honey Carefully Before Putting it on the Market.

Honey is being moved very rapidly through the local stores. Several concerns have used honey as a leader and have moved it at a small profit. I have made some observations of honey in the local stores and found some interesting facts. I found that many containers were underweight. Some 5-pound pails grossed as low as 4 pounds 8 ounces and many were 8 ounces under weight. Small pieces of

wax and other debris were found in most of the cans. In some cans, bees' legs and wings were found. Most of this honey had been shipped in and perhaps the packer didn't think he would get a kick. Perhaps he won't get a letter about it but the buyer will look for another label next time he purchases honey if he buys honey again. Such honey does a lot of harm to the market and beekeepers should be more careful when packing honey in small containers. I find it pays big dividends to strain all honey through fine mesh cloth. —C. H. Gilbert, Laramie, Wyoming.

NEW YORK.—There have been only four or five days to date, April 8, warm enough for a good flight for bees. The extent of winter losses has not yet been determined. In our own apiaries, the loss in colonies is nearly 10 per cent and counting weak colonies that will not build up naturally in time for the main flow from clover, the loss is probably around 25 per cent.

In spite of nearly five months of confinement without flight, during which time we had the lowest temperatures on record, normal strong colonies with stores consisting mostly of goldenrod and aster, with wind protection and proper insulation have wintered nearly 100 per cent. Most of the losses have occurred among small, subnormal colonies.

We anticipate that very little of the loss in New York State will be made up by the purchase of packages from the South because present prices of packages, transportation, and incidental losses connected with packages, amount to more than can be made in a normal year in the production of honey. It seems preferable for New York beekeepers to make up their losses by increase from their own bees.

Honey is just about cleaned up. Conditions and prospects for the new crop are at least average. A good covering of snow protected most of western New York during the cold weather.

The fruit orchards of western New York have suffered. The 1934 peach crop has been entirely wiped out and other fruits have been damaged.

There is a large acreage of new clover seeding this year. The usual practice is to seed with winter wheat. This section has the largest acreage of wheat I have ever seen and its appearance is exceptionally fine.—H. M. Myers, Ransomville, New York.

QUEBEC.—Six months' acquiescence seems rather unusual to one living south of the international line, but is not an uncommon experience in our far north country. We have just come through such an experience in wintering bees for the season of 1933-'34. Bees had their last flight prior to October 24, when our first snowfall came, and since that time we have had severe cold weather with very heavy snowfalls. Colonies were put into cellars between November 10 and 15, and were in good condition, strong in young bees and heavy with stores. The steady cold weather has been very favorable for wintering bees, and combined with the fine condition of colonies, they will be able to endure another two weeks confined in the cellar without any serious loss in bees.

For the past few years winter killing of clovers has reduced the main honey flows to a minimum. The heavy snowfalls during the past winter promise a good condition for clovers.

Because of very light crops of honey during the past few years, prices have advanced from 6 cents to 7 cents per pound in 1931, 8c a pound in 1932, to 9 to 10 cents per pound in 1933. As no honey is in the producers' hands now, the writer predicts that honey prices will be 2 cents per pound higher this coming season.—Thomas Wood Anderson, Hemingford, Quebec.

MICHIGAN.—From advance reports it appears that winter loss will be the heaviest in years among neglected apiaries. The unusually late spring weather has made it impossible for bees to get much nectar or pollen to date. Many of the fruit growers have suffered the loss of part or all of their bees. And with only part of the fruit buds left alive because of freezing injury, they apparently are anxious to set fruit on what buds are alive by insuring ample insect pollination. At least there is an active demand for rental bees for pollination.

Honey seems to be very scarce and prices are gradually becoming firmer. The old crop should be entirely moved by July 1, maybe sooner. Right now, prospects do not indicate more than a fair crop. Some sections report considerable winter killing of clovers. C. W. A. workers in some areas did such a thorough job of clean-up

that much waste land sweet clover was burned down. This means no crop from what was a life-saver for some beekeepers the last two years.

Two important meetings are scheduled for May. Beekeepers of southeastern Michigan, or the Second District, will meet at Adrian, on May 11. Ohio beekeepers are cordially invited to attend. A license fee for beekeepers is one important matter to be discussed. Northern Michigan beekeepers will meet at Traverse City on May 22, to discuss organization of the Fifth District. Fruit growers and beekeepers both will be interested in this meeting. Don Hootman and R. H. Kelty will appear on the program.

The plan to organize Michigan by districts is making real progress. Districts 2, 3 and 4 are now completed. A full list of officers and county representatives will be ready next month. At the several meetings held this winter a new interest is evident. For instance, there is a deep-seated urge to get together to improve foulbrood and marketing conditions. A golden rule code of ethics is being prepared, which may accomplish by voluntary support what a marketing agreement attempts to do by force. At any rate, one year from now beekeepers in Michigan will be better organized than ever before.

Please reserve August 1, 2 and 3 for the Geo. S. Demuth Memorial Meeting in Michigan. All beekeepers will be interested in the joint League-Institute-Inspectors' program. Full details later.—R. H. Kelty, East Lansing, Michigan.

NORTHERN INDIANA.—In northwest Indiana most of the bees that had sufficient stores have come through the winter in excellent condition. A much larger number of colonies than usual, however, have died of starvation, possibly 15 or 20 per cent. Starvation of cellar-wintered bees was due in part to lateness of removal from the cellar. Light-weight colonies might have been fed if it had been practicable to set them out, but snow and cold winds prevented this. Our experience would indicate that after March 15, in this locality at least, the sooner bees can be removed from the cellar the better it will be for them, provided weather conditions are right for flight. A few days of cold thereafter does not seem to injure them since there is little or no brood in the hives.

As to clover prospects, conditions even a few miles apart may differ, but in this immediate locality there seems to be little of either alsike or white clover in fields or lawns, where in former years there was a thick covering. With an average production of 60 pounds per colony and honey at five or six cents per pound wholesale, beekeepers are questioning whether the purchase of package bees would be a profitable venture. In case no clover shows up a large apiary may become a liability. We are hoping that it may not become necessary to feed through the month of June as we have had to do occasionally.

Honey, both comb and extracted, is about cleaned up. Only enough is left to supply local trade and there will be none to carry over. With us this is the first time in many years that we have not had a carry-over.

There are fewer bees than formerly in this part of the state. Owing to low prices many apiaries have been neglected. There has been a tendency among commercial beekeepers to restrict their activities because of the difficulty in disposing of their honey at a reasonable price. With the old honey out of the way we may now look for some increase in the number of colonies.—E. S. Miller, Valparaiso, Indiana.

ARIZONA.—Along the lower Gila River bees have not swarmed. Usually first swarms appear from March 1 to 10. The honey flow is now opening and colonies are not strong. A good crop is not anticipated this season. However, conditions are very peculiar and it is possible for prospects to change.

The weather has continued dry with only a light shower during the past 30 days. Mesquite is in bloom but bees are working it very little. Most of the honey being gathered now is from the salt cedars or tamarack which grow very well along the Gila River. Palo verde is in bloom, but it is very scattering.

Rains Needed to Improve Prospects for a Honey Crop.

Bees in the higher elevations are building up well, but the mountain areas are suffering from lack of moisture.—Leslie Wedgworth, Oracle, Arizona.

IOWA.—Eastern Iowa has experienced one of the driest winters the writer has ever seen. The bare ground afforded little or no protection for clovers. While this has hurt alsike and medium clover, I was surprised on examining a field the other day to see the white clover in such good condition.

The ground is still dry and more moisture will be needed this spring to insure a crop. Even though last season was dry, many beekeepers secured a crop of clover honey in some favored localities, Jones County especially. Beekeepers are optimistic about white clover.

Lack of Stores and Poor Queens Take a Large Toll of Colonies Annually.

Some feeding will have to be done if colonies are brought up to the proper strength for the honey flow. After years of experience with bees I am sure the lack of ample stores in early spring and up to the honey flow is the main cause of weak and dead colonies. Poor old worn-out queens is another contributing cause. If these two important points could be impressed upon the minds of beekeepers who are complaining of short crops, and weak colonies, it would be time and money well spent.

Very little honey is carried over. The market is amply supplied with small lots. —W. S. Pangburn, Center Junction, Iowa.

ONTARIO.—A long and bitter wind is fast becoming a thing of the past. We hope cold weather will soon be only a memory. Our bees did not have a full flight until April 4. As they had not flown since early last November, this constitutes a record since we have been keeping bees.

Reports on wintering vary from 100 per cent loss to nearly 100 per cent alive. The loss will be much higher than normal. The cause of the loss is in a sense starvation, but that doesn't mean that stores in all cases were deficient. Many colonies actually starved or died from dysentery, leaving combs almost solid with honey. In some hives honey was granulated hard as a board. In others the honey was uncapped, not in a granular condition but more like taffy, so tough that bees could not utilize it. Our own colonies had more natural stores than usual last fall. Our very best colonies are those that were in 8-frame Langstroth hives and naturally short of stores in October. These colonies were made almost solid with sugar syrup last fall and it requires no study to see the difference.

For winters like the past one I feel quite sure that for best wintering results, one requires the maximum amount of good stores in the minimum of space. Instead of cutting down on feeding in the fall, we will increase the food supply.

I have often said that we should be either farther south or farther north from where we are located. South and west of Lake Ontario, where temperatures usually are a few degrees warmer, bees generally get a flight in mid-winter when ours get none. We get little snow and this past winter bees were exposed to the bitterly cold weather all the time. An apiary not far from us of 70 colonies, wintered well this past bitterly cold winter and they were unpacked in ten-frame Langstroth hives. The bees were in one long row south of a fence and all winter they were covered up in a deep snow bank. That shows how snow will protect bees.

Since my last report to Gleanings I have learned on good authority that quite a lot of Ontario honey is still unsold in Great Britain. Markets seemed to have slowed down and satisfactory offers have not been made.

The news of the death of Mr. Demuth came as a great shock to the writer, as well as to hundreds of Canadian beekeepers who had known and loved this noble man. Having attended so many of our conventions he was probably as well known as any Canadian beekeeper and he was very popular. While friendly to all he was never effusive—that was not his nature—but the absolute absence of the "ego" in him was a virtue that appealed to all. I shall miss him greatly. After being associated with him by constant correspondence so long, I can hardly realize that he has left us. When attending our conventions he was a busy man. Many were always anxious to be with him between sessions. He always scheduled his time so that we could have fifteen minutes or more together.

The sympathy of a great host of Canadian beekeepers will go out to Mrs. Demuth and the son as well as others to whom he was near and dear. After all, it is not so much a matter of how long we live as how we live, and measured by that standard, Geo. S. Demuth's life span was away above the average.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

Using Weak Colonies

Where the honey flow comes early as it does here, it does not pay to equalize the strength of all colonies, by drawing from the strong and giving to the weak. I let the weak colonies come along in their own way until the strong ones are ready to swarm. I then throw the working forces of two strong colonies into one weak colony simply by moving the hives. I take the strong ones to the fruit orchards. When I bring them home very strong in bees, I set one of these strong colonies on each side of a weak colony. When they get located I move the strong colonies away, put supers on the weak colony and watch the bees as they fill their supers rapidly. The colonies that were moved away will soon be strong again, and will store surplus honey if the honey flow lasts several weeks. There is not likely to be any swarming during the season.

This method could be worked with package bees instead of weak colonies by installing them three or four weeks before the swarming season.—Harry Selders, Farmington, Delaware.

Checking Up on the Bees

For the beekeeper who desires a very close check on each of his colonies, I recommend a unique method which I am sure will prove very satisfactory. Number your hives with neatly painted numbers, or numbers made of tin, which can be obtained at your five-and-ten-cent store for a few cents each. Next secure a blank notebook, or a ledger with blank sheets. Number the pages corresponding to the numbers of the hives, devoting one page or more to each hive. You now have each colony numbered. Should some colonies need requeening, or if a swarm issues, the date may be written down in the notebook. When you inspect your bees' food supply and brood, or weigh the hives, the condition of the bees can be recorded so that every colony will have the best of attention. A briefly recorded check on the progress of each colony may prevent queenlessness, food shortage or failing colonies. The neat appearing numbers on the hives will greatly add to the appearance of your apiary.—Clarence J. Tontz, Crescent, Oklahoma.

Good Combs as a Hobby

Frank Lee, of Bristow, Virginia, keeps upwards of 100 colonies in a locality where honey flows are decidedly moderate—where the average beekeeper often has trouble getting bees to build comb at all before the flow is past. But in Lee's honey

Mr. Lee says these are only ordinary combs.

house, hanging from overhead racks—where, incidentally, neither mice nor moths can operate without being discovered—were several hundred of the finest combs I had ever seen. They were straight, uniform, all worker cells, with hardly a trace of buckling or irregularity in any of them, built clear out to the wood and many of them solid to the wood all around, with scarcely a hole even at the edge. But these, he explained, were the poorest of his combs. The really good ones were in the hives!

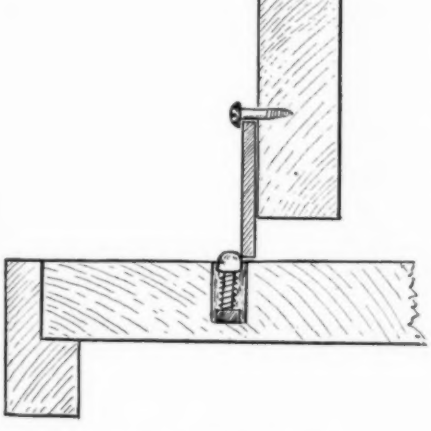
The fact that Mr. Lee gets profitable crops of honey regularly in a locality

where honey production is not generally considered profitable proves that he has something on the average beekeeper. Of course, good management counts; but good combs count also, and there can be no doubt that in this case they have an important bearing on his success.—W. H. Hull, Vienna, Virginia.

Entrance Closing Device

Some kind of entrance closing device is very desirable where bees are moved frequently. An ideal closing device should meet the following requirements: (1) It should provide ventilation, (2) it should be reliable and secure, (3) it should be adjustable, (4) it should be inexpensive, (5) it should be easily applied.

I have tried a number of different types of closing devices and have found the one I am presenting here the most satisfactory for my needs. First I should probably state that all my hives have the bottom board permanently fastened to the body. I have found the advantages of this overbalance the disadvantages where migratory beekeeping is practiced.



End view of entrance-closer.

By referring to the diagram it may be seen that this closing device consists of a piece of strap iron, two wood screws, and a ball type cupboard door catch. I use a piece of strap iron ⅛"x¾"x16¼". The screws are round headed, ¾" long. The hole for the catch must be located accurately. The catch pushes up against the iron and keeps it from slipping. When applied it may be used to scrape in any bees that are out on the alighting board.

This device meets all the requirements but that of ventilation. I overcome this by using moving screens in place of the lid and by moving at night. As an extra precaution to prevent smothering a strong colony, one might add an extra super just before moving, although I have never found this necessary.

It is reliable in that it does not let any bees out and it stays in place. Further locking is not necessary but could be accomplished by tightening the screws against the iron. It is adjustable to any size of opening. The catches cost five cents apiece and the strap iron five cents a pound. A pound will make two closing irons, so that a complete closing device costs less than ten cents. It requires but a few seconds to close a hive.—Fred M. Beekes, North Hollywood, California.

Floor Polish Made of Beeswax

Your readers may be interested in a formula for a floor wax or paste polish using beeswax, given in a recent circular letter (L. C. 388), from the Bureau of Standards on "The Care of Floors." They preface their formula as follows:

"The newer water-wax emulsions, commonly called non-rubbing liquid waxes, are now widely used on wood, cement, linoleum, rubber tile, cork, asphalt tile, mastic, and other floorings."

Following is their formula with directions: Turpentine, 1 pint; beeswax, 4 ounces; ammonia (10% strength), 3 fluid ounces; water, 1 pint. Mix the beeswax and turpentine and heat them by placing the vessel in hot water until the beeswax dissolves. Remove the mixture from the source of heat, add the ammonia and the water and stir vigorously until the mass becomes creamy. This wax should be applied lightly on varnished or shellacked floors and any excess wiped off at once as the ammonia may attack the varnish or shellac.

We have had some experience in making up two samples of this floor wax, using (1) a hard bleached beeswax, and (2) a soft yellow beeswax from cappings. The floor wax from the former appeared to give better results. However, if a bleached wax is not available it is preferable to use a hard, refined beeswax.—G. E. Marvin, Assistant Apiculturist, Washington, D. C.

The Swarm That Came Back

All sorts of methods to retrieve swarms have been published from time to time and generally with good results, provided a given method is carefully followed; but what can be done when the swarm takes to one of the highest and most outstanding branches of a tree that defies all efforts to reach them?

This happened in June, when the swarm could be seen, clustered on the very tip of a frail limb, far, far up from the ground. Neither man nor boy could be hired to go out on that limb and as nothing in the shape of a long pole from the top of a ladder could reach them, they were given up as lost.

In plain view they went to work vigorously and soon large irregular masses of comb hung down from that tantalizing limb—so plain to the sight—yet far out of reach. The storms came, some very severe storms, and it seemed that they would be destroyed as the combs swayed back and forth in the pelting rain; but after the storms ceased they were as busy and numerous as ever. We began to count on a large supply of honey when the cold weather would finally exterminate the bees. But, lo, late in September a storm did come that seemed too much for their wax habitation to withstand. Pieces of comb lay on the ground and in the rain-soaked grass. The poor queen lay dead with handfuls of her faithful subjects about her. When the sun came out the survivors in the tree took to the wing and there was a steady procession from the tree back to the hive from which they had originally started.

How they were received is not known as there were no glass sides to the hive. It seems safe to say that they were welcomed, for the hive which had been very weak after the swarm left in June, suddenly became crowded with bees.

Does this lead to the conclusion that the old adage proves true that "There is no place like home?" Evidently the bees thought so.—Adelaide Combs, Brooklyn, New York.

Lime Water an Antidote for Bee Stings

A beekeeper was stung on the eyelid. When removing the sting with all possible care, he felt the poison shoot through into his eye. He declared that no bee sting ever hurt him like this one. Ammonia, onions, all of the usual remedies were impossible because of the location of the injury. Water seemed to be the only resort, and it was used for some time but without avail. An hour or two later one of the family, resorting to her chemistry, determined that lime water, an antidote to acids, should relieve the pain.

Happily, some lime water that was known to be pure, having been prepared for a school experiment, was at hand. It was of full strength—all the lime that the water would take up. It was tried with the utmost caution as an eye wash. To the surprise of the sufferer, it brought almost instant relief. Several applications reduced the pain to that of an ordinary bee sting, and full recovery came in a day or two. The victim believes that if lime water had been applied at once the unusual pain would not have been experienced. We shall remember this remedy in the future.—Bessie L. Putnam, Conneaut Lake, Pa.

Do Bees Remember?

In one of our queen-rearing yards near Medina it was necessary to do outdoor feeding during a very dry spell a few years ago. The manager of the yard made a practice of feeding the bees each day about 1:30 p. m. He fed the bees thin sugar syrup in a long trough in which were placed corncobs and pieces of sticks to keep the bees from drowning.

One day I happened along while he was feeding the bees. As he approached the trough with a bucket of sugar syrup, a large number of bees met him, even before he reached the feeding place. The bees were not cross. They didn't even attempt to sting him. They simply hovered over him in clouds. Some of the bees even lit on the edge of the bucket containing the sugar syrup. After the syrup was emptied into the trough the bees immediately started to take it up.

I was somewhat surprised to see the bees so docile. They really reminded me of a flock of chickens meeting the owner at feeding time. It was an interesting sight. I inquired about the behavior of the bees and learned that a few days after this feeding had been started, the bees were always on hand ready for their meal. This feeding place was twenty or thirty rods away from the apiary.

Bees certainly must remember, at least from one day to the next. Some may call it instinct, or reflex action.—Jack Deyell, Manager The A. I. Root Co. Apiaries, Medina, Ohio.

Geo. S. Demuth

The Rev. Father M. G. Hepner

Destined to be Mentioned with those of the Greatest of American Beekeepers

Since Geo. S. Demuth is gone, he is receiving the tribute of praise which was his due, and which he so humbly declined during his lifetime. Truly, he was a man possessed of the virtue which his name expressed. The few times I met him—twice at Harrisburg, and several times at Medina—left an indelible impression, for I recognized in him a kindred spirit: the worker, the server, the altruist, the man who could hide himself and his talent in a humdrum existence and who could give from the treasure house of his knowledge and experience with a lavish hand without expecting acknowledgment or even a word of thanks.

What a loss to the beekeeping world! I foresee the figure of George Demuth growing larger and larger in the history of api-

With the bees he loved.

culture as the years pass along, until he will be mentioned with those of the greatest: A. I. Root, Langstroth, Miller, Doolittle, Quinby, and that galaxy of men who by their experiments and fearless steps in new directions have made beekeeping what it is today. He was the practical, patient teacher and wise instructor who did not clothe himself in the glittering gown of the scientist—although ever ready to accept and use the findings of science as soon as he recognized their practical value and purport—but simply and unaffectedly told every willing scholar what he knew and what he had found out, what to do, and how to do it. Truly we can place on his lips the words of Horace, now when he can no longer disavow our praise: Exegi monumentum aere perennius—"I have raised a monument more lasting than bronze"—a lasting memory in the minds of men.

What a loss he must have been to the Root Company, and still more what a loss to the heads of the business themselves, for not only will they miss the willing worker, not only the untiring editor, but much more so the wise counsellor, the unaffected friend and interested co-worker. Could it be possible to erect him a monument, by gathering the valuable information given in the two departments in "Gleanings" that were his particular feature, "Talks to Beginners" and "Gleaned by Asking"? What a book full of practical value it would make! And how it would assist in keeping alive his knowledge and advice which otherwise would remain buried in the back numbers and shelf-stored copies of the little magazine he lived for and he loved! Truly, his memory will be held in benediction, and his praise shall not perish from the lips of men!

Resolution in Memoriam

Whereas, The Almighty has seen fit to grasp from our midst, George S. Demuth, the loyal, self-sacrificing friend of every beekeeper in the country;

Be it resolved, that the beekeepers of America do hereby express our deepest sympathy and sorrow to the bereaved family, to Gleanings in Bee Culture and to The A. I. Root Company. The beekeeping fraternity will miss his inspiring presence and friendly advice at their conferences and meetings as only so recently held at Minneapolis. His current writings and suggestions as Editor of Gleanings in Bee Culture will be regretfully missed but his published words will be cherished as beekeeping classics. Although he is no longer among us, may the fact that his work has been well and patiently done offer some solace.

(Signed) J. W. Newton, President,
V. G. Milum, Secretary,
American Honey Producers League.

Talks to Beginners

M. J. DEYELL

Every beginner is anxious to make good in beekeeping and is asking: What attention do bees need during the month of May?

Beginners, as well as veteran beekeepers, may be divided into three classes: (1) Those who manipulate their colonies too often, (2) those who fail to examine their bees often enough to know what is going on within the hive, and (3) those who have learned from reading, association with good beekeepers and experience, how and when to give their bees the proper attention. The third class of beekeepers is likely to attain success.

Importance of Handling Bees Properly

By rights, colonies should be examined only during bright warm days when bees are flying freely, preferably during a honey flow. Bees are likely to resent being handled on cool cloudy days. Many beginners have small apiaries within the limits of towns and cities. It is extremely important that the owners of such apiaries know how and when to handle their bees, and how to avoid stinging. Occasionally a beginner, or even a more experienced beekeeper, may attempt to handle the bees when weather conditions are unfavorable for manipulating hives, with the result that the bees may become somewhat unruly and cause a real disturbance in the neighborhood. Many successful suburban beekeepers who maintain moderate sized apiaries year after year have learned how and when to handle their bees and experience no such difficulties. It is an advantage to have a back-lot apiary surrounded by trees, buildings or a high-board fence, so that the bees may be compelled to fly up and over.

The Beginner's Objective—Surplus Honey

One of the first things a beginner should learn, if possible, about his location, is when to expect the honey flow, or honey flows, of the season. This information can usually be obtained from some reliable, experienced beekeeper in the locality.

In many of the southern states, the main honey flow occurs during April and May. It may come as early as March and April from orange blossoms in California, mesquite in Texas, or tupelo in Florida. In the middle latitudes, the bulk of the honey may be gathered in June, while in the northern tier of states and southern Canada, the major honey flow may occur during June and July, and in some places in the far north during August and September.

The month of May finds beekeepers in different latitudes with their colonies in different stages of development. In regions where surplus honey is being stored this month it is necessary to provide ample storage space for incoming nectar. Many tons of honey are lost annually because beekeepers fail to provide supers in time.

May the Building-up Period

In many portions of the United States and Canada, May is the most important month preparatory to the main honey flow. Normal colonies need ample stores and comb space for brood rearing. Any colony that has less than 10 or 15 pounds of honey should be fed sugar syrup or given combs of honey. About one comb of honey is required for producing a comb of brood.

Some beginners are using food-chamber hives, which means wintering each colony in a two-story hive, the upper hive or super being filled with honey. With this plan, spring feeding is seldom necessary, whereas with the single-story plan feeding in the spring has to be resorted to frequently.

Management During Fruit Bloom

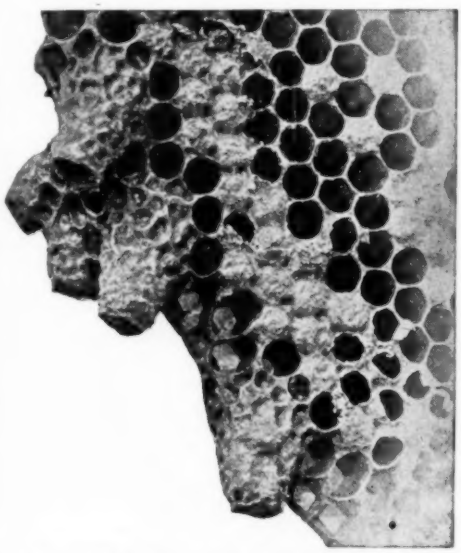
During the dandelion and fruit-bloom honey flow, colonies build up rapidly. When weather conditions during fruit bloom are favorable for nectar secretion and bee flight, strong colonies may store from 20 to 40 pounds from fruit blossoms and dandelions. When a large supply of honey is stored from these early sources, it is rapidly converted into young bees. This is quite necessary for building up populous colonies ready for the main honey flow later on.

Each strong colony during the spring honey flow may require a super in order to prevent swarming, also to supply comb space for brood rearing and incoming nectar. Some beekeepers gauge their progress in beekeeping by the number of swarms they secure. As a matter of fact, swarming is undesirable and should be controlled, if possible. When a colony swarms the working force is divided. It is preferable to keep the working force together. In order to control swarming, strong colonies

should have ample comb space. Congestion in the brood chamber of the hive is one of the prime causes of swarming.

How to Detect Signs of Swarming

When examining colonies during May, and especially during a good honey flow, the beginner may find queen cells similar to the ones shown in the picture. These are usually built along the lower edges of the comb. They are easily recognized because they are different from other cells in the hive. Instead of being horizontal as are worker cells and drone cells, they are in a vertical position with the opening at the lower end. When queen cells are



The queen cells are the large ones on the left, somewhat resembling peanuts.

first started they resemble shallow cups. The queen deposits an egg in each cup. When the cells are completed they resemble a peanut shell. In three days the eggs hatch into larvae, and in five more days the cells are built out and capped over. The swarm usually issues at the time the first cell is capped—that is, in eight or nine days from the time the egg is deposited in the cell. As a rule, when queen cells are found in the spring, swarming can be prevented by destroying the cells and giving more comb space.

What to Do if a Swarm Issues

If a swarm should come out, the old or parent hive should be set on to a new stand a few feet away, turning its entrance away from its former position. A new hive containing either frames with full sheets of foundation or drawn combs, should be placed on the old stand. Quite often a swarm will cluster on the limb of a small tree. The limb should be cut off and the swarm shaken at the front of the hive intended for the swarm. It is an advantage to put a frame of brood in the hive, in order to attract the bees and to cause them to become established readily in their new home.

After two days the old hive which was moved to the new location should be given a turn, to face the same direction as the new hive containing the swarm. Then, after seven days, the old hive should be moved to another location, at least 15 feet away. This moving should be done carefully, in the middle of the day when a large percentage of the old bees are in the field. These field bees when they return will easily find their way into the new hive containing the swarm and thus the population will be increased.

In a short time the old hive that has been moved to a new location will have a young laying queen. When swarming occurs early in the season, this parent hive is likely to store some surplus honey. If, however, swarming occurs rather late in the season, no surplus may be expected.

An Advantage to Clip Queens

As colonies are checked through in the spring, it is an advantage to clip each queen's wings. This prevents the queens from flying away with swarms that may come out when the owner of the bees is absent.

To clip a queen, she should be found on the comb, then caught by the wings with a finger and thumb of the right hand. She should then be transferred to the second finger and thumb of the left hand and held by the thorax while two-thirds of the two wings on one side are clipped with small scissors held in the right hand. This clipping is not so difficult as it may sound. Clip the right wings even years, the left wings odd years.

How to Hive a Swarm with a Clipped Queen

When a colony with a clipped queen swarms, the queen will be found crawling around on the ground in front of the hive from which the swarm issued. She should be caught and put into a small wire screen cage and placed in a shady spot out of the sun while the old hive is being moved to a new location and a new hive

(Continued on page 307.)

Superstition.

It has been said of the ancient Greeks that their principal occupation was "believing things." It is astonishing how much Greek there is in the human race today for so many have a knack of believing everything under the sun that is not true. Josh Billings would say they know so much that ain't so. They plant, cultivate, and reap by the moon. They read their destiny in the stars. They believe the almanac rather than the government weather reports and never drive or drill a well without having it water-witched. They believe in hypnotism, mind reading, spiritualism, and dreams. Thunder will sour milk and kill unhatched goslings.

Such a person is a neighbor of mine. She knows how to make mighty fine sourcrout but always waits till the moon is just so. She said to me, "There is no other plant affected by the moon as much as the cabbage. It must always be planted in the dark of the moon but it must be cultivated in the light of the moon. Sourcrout must always be made in the dark of the moon or it will have a bad smell." I said that if that is the case Limburger cheese must always be made in the light of the moon. She continued, "Now if you do not believe the moon affects the crout, you just watch when you put the weight on it and you will see that the juice rises in the dark of the moon and goes down in the light of the moon."

I pleased her greatly by agreeing with her on one occasion. I said, "I will have to give in one point and admit that the weather does have some effect on the juice for last night it raised three inches in the jar."

She said, "I told you so, for it is now the dark of the moon." I replied, "Yes, it was dark all right, but the fact that the wind blew the cover off the jar and the rain from the eaves poured in, may have had something to do with it."

She insists that onion sets must be planted just as the moon is changing, or they will all "swivel up." She asked me if I did not know that if a black cat crossed my path it always brought bad luck. I told her that I knew that to be true from experience, for only a few weeks before a cat crossed my track or rather got by one wheel but the other one ran over said cat and mashed the fiddle strings out of it, proving it was bad luck for the cat to cross my path. She advised me to have my well water-witched or I would never get water. I told her I would like to see a witch that could find a place where there is no water around here. She replied, "Oh, they can't tell you where it ain't. They just tell you where it is." She claimed she could focus her eyes on a person and make him turn round. I said, "All right, let us prove it. Let us try it, say, 100 times. If you succeed in 75 cases I will be convinced." She said, "Oh, it only works

It was bad luck for the black cat.

once in a while, maybe only once in a hundred times, but it works some times." She believed the one rather than the 99. She said I must always plant my potatoes in the dark of the moon. I told her there is some sense in that for the potatoes do not need moonlight to grow by for they have eyes.

One day she informed me that her grandfather kept bees and they always did just fine for him for he knew how to take care of them. When any member of the family died he always went out and rapped on the hives and told the bees about it. If he hadn't they would not work any more. He always rubbed the new gum with peach leaves and the swarm always stayed put. Another thing he was

(Continued on page 306.)

WHO'S WHO IN APICULTURE

A handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping and other information often needed.

State or Province	Beekeeping Taught in Agr. Colleges	Bees on Combs Admitted.	Net Wt. Law		Inspector State or Province	Secretary State Assn.
			Ext.	Comb.		
Alabama...	Yes	No	Yes	Yes	T. Atchison, Montgomery.	J. M. Robinson, Auburn.
Alberta....	Yes	No	Yes	Yes	S. O. Hillerud, Edmonton.	C. H. Kern, Lethbridge.
Arizona....	No	Cert.	Yes	Yes	H. B. Skinner, Phoenix.	Glen F. Blair, Phoenix.
Arkansas...					J. V. Ormond, Elba.	
B. C.....	No	No	Yes	Yes	A. W. Finlay, Huntingdon.	W. J. Sheppard, Victoria.
California..	Yes	Cert.	Yes	No	H. M. Krebs, Sacramento.	C. W. Hartman, Oakland.
Colorado...	Yes	Cert.	No	No	R. G. Richmond, Ft. Col.	Mrs. H. Carson, Denver.
Conn.....	Yes	Cert.	Yes	Yes	W E. Britton, New Haven.	C. J. Rost, Meriden.
Delaware...			Yes	Yes		
Florida....			No	No	R. E. Foster, Gainesville.	
Georgia....					A. B. Hamlin, Macon.	A. B. Hamlin, Macon.
Idaho.....	No		Yes	Yes	W. H. Wicks, Boise.	J. M. Stark, Middleton.
Illinois....			Yes	Yes*	A. L. Kildow, Putnam.	V. G. Milum, Champaign.
Indiana....	Yes	Cert.	Yes	Yes	J. E. Starkey, Indianap.	J. E. Starkey, Indianap.
Iowa.....			Yes	Yes	F. B. Paddock, Ames.	F. B. Paddock, Ames.
Kansas....	Yes	Cert.	No	No	R. L. Parker, Manhattan.	Geo. Pratt, Topeka.
Kentucky..	Yes	Cert.	No	No	W. A. Price, Lexington.	W. A. Price, Lexington.
Louisiana..			Yes	Yes	W. E. Anderson, Baton R.	
Maine.....	No		Yes	Yes		
Manitoba...	Yes	No	Yes	Yes	L. T. Floyd, Winnipeg.	L. T. Floyd, Winnipeg.
Maryland...	Yes	Cert.	Yes	Yes	G. J. Abrams, College Pk.	E. N. Cory, College Pk.
Mass.....	Yes	Cert.	Yes	Yes	B. M. Gates, Boston.	W. Copeland, S. Lincoln.
Michigan...	Yes	Permit	Yes	No	C. D. Doane, Lansing.	R. H. Kelty, E. Lansing.
Minnesota..	Yes	Cert.	Yes	Yes	A. G. Ruggles, St. Paul.	M. C. Tanquary, St. Paul.
Mississippi.	Yes	Cert.	No	No	Clay Lyle, State College.	Clay Lyle, State College.
Missouri...						Nina Scott, Clinton.
Montana...	No	Cert.	Yes	Yes	O. A. Sippel, Bozeman.	O. A. Sippel, Bozeman.
Nebraska...	Yes	Cert.	Yes	Yes	L. M. Gates, Lincoln.	Don B. Whelan, Lincoln.
Nevada....	No	No	Yes	Yes	G. G. Schweis, Reno.	Mrs. F. Lima, Fallon.
New Bruns.					G. W. Ricketson, Frederic.	G. W. Ricketson, Frederic.
New Hamp..	Yes	Cert.	Yes	Yes	G. C. Barton, Meriden.	E. J. Rasmussen, Durham.
New Jer...	No	Cert.	Yes	Yes	E. G. Carr, Pennington.	E. G. Carr, Pennington.
New Mexico			No	No		
New York..	Yes	Cert.	Yes	No	A. G. Gould, Albany.	E. T. Cary, Syracuse.
No. Caro...	Yes	Cert.	Yes	Yes	D. L. Wray, Raleigh.	F. B. Meacham, Raleigh.
No. Dak....	Yes	No	Yes†	Yes†	J. A. Munro, Fargo.	J. A. Munro, Fargo.
Nova Scotia.	Yes	No	Yes	No	H. G. Payne, Truro	E. D. Craig, Kentville.
Ohio.....	No	Cert.	Yes	Yes	C. A. Reese, Columbus.	W. E. Dunham, Columbus.
Oklahoma..	Yes	Cert.	No	No	H. H. Berry, Norman.	
Ontario....	Yes	No	Yes	No	E. J. Dyce, Guelph.	E. J. Dyce, Guelph.
Oregon.....	Yes	Cert.	Yes	Yes	C. A. Cole, Salem.	H. A. Scullen, Corvallis.
Penn.....			Yes	Yes	H. B. Kirk, Harrisburg.	
Quebec.....	Yes	No			C. Vaillancourt, Quebec.	G. Prud'homme, Chat'q'y.
Rh. Island..	No	Cert.	Yes	Yes	A. E. Stene, Providence.	P. L. Brown, Attleboro.
Sask.....	No	No	Yes	Yes	R. M. Pugh, Regina.	R. M. Pugh, Regina.
S. Caro....	Yes	Cert.	Yes	Yes	J. A. Berly, Clemson Col.	
S. Dak.....			Yes†	Yes†		
Tenn.....			Yes	Yes	J. M. Buchanan, Nashville.	G. M. Bentley, Knoxville.
Texas.....	Yes	Cert.	Yes	Yes	C. E. Heard, College Sta.	H. B. Parks, San Antonio.
Utah.....	No	Cert.	Yes	Yes	W. H. Hendricks, Salt L.	L. Walling, Salt Lake Cy.
Vermont...	No	Yes	Yes	Yes	Chas. Mraz, Middleburg.	Chas. Mraz, Middleburg.
Virginia...	Yes	Cert.	Yes	Yes	H. W. Weatherford, V. H.	J. R. Prothero, Rustberg.
Washington.	Yes	Cert.	Yes	Yes	E. J. Campbell, Olympia.	M. F. Mommsen, Tacoma.
West Va...	No	Cert.	Yes	Yes		
Wisconsin..	Yes	Permit	Yes	Yes*	E. L. Chambers, Madison.	H. J. Rahmlow, Madison.
Wyoming...	No	Permit	Yes	Yes	C. L. Corkins, Powell.	C. L. Corkins, Powell.

*If in opaque containers. †Name and address of responsible party must be on package or box.

United States—Investigation and Demonstration in Beekeeping, James I. Hambleton, Apiculturist, Bureau of Entomology, Washington, D. C.; Southern States Field Laboratory, W. W. Whitcomb, Baton Rouge, La.; Pacific Coast Laboratory, Frank E. Todd and Geo. H. Vansell, Davis, Calif.; Inter-mountain Laboratory, A. P. Sturtevant, Laramie, Wyoming.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. P. Gooderham, Dominion Apiarist, Experiment Farm, Ottawa, Canada.

American Honey Producers' League—J. W. Newton, Baton Rouge, La.

American Honey Institute—Mrs. M. F. Jensen, Commercial State Bank Bldg., Madison, Wis.

Texas Apicultural Research Laboratory—H. B. Parks, R. F. D. No. 1, San Antonio, Texas.

Extension Specialists in Beekeeping—Alabama, W. A. Ruffin, Auburn; California, J. E. Eckert, Davis; Connecticut; L. B. Crandall, Storrs; Florida, R. E. Foster, Gainesville; Iowa, F. B. Paddock, Ames; Manitoba, L. T. Floyd, Winnipeg; Maryland, Geo. J. Abrams, College Park; Michigan, J. C. Kremer, East Lansing; Nebraska, O. S. Bare, Lincoln; New Brunswick, Ersol Moore, Prince William; New York, Geo. H. Rea, Ithaca; North Carolina, C. L. Sams, Raleigh; Nova Scotia, H. G. Payne, Truro; Ohio, W. E. Dunham, Columbus; Oklahoma, C. F. Stiles, Stillwater; Ontario, E. J. Dyce, Guelph; Oregon, H. A. Scullen, Corvallis; Pennsylvania, E. J. Anderson, College Station; South Carolina, E. S. Prevost, Clemson College; Texas, R. R. Reppert, College Station; Vermont, Charles Mraz, Middleburg; Virginia, H. W. Weatherford, Vernon Hill.

Food Department

Malitta D. Fischer

Educating the Coming Generation to be Honey-Minded

Many requests have been received at the Institute office since the last food section was written (March 8). The requests were quite different. Most of them were from homemakers but a surprising percentage were from students in Texas. The teachers in and about Dallas, Texas, were sponsoring a bee and honey project and every pupil in the second and third grade classes of certain schools wrote for material. It made me realize that a special leaflet on bees and honey was needed for grade school children. I wonder how many of you have recommended to the grade teachers in your public schools such a bee and honey study for the younger children. One teacher in South Carolina wrote as follows:

"I am a school teacher and my pupils are now studying bees. We have an observation hive. We have studied the anatomy of the bees; how they make honey, wax, propolis, the life history of the bee, and are now preparing to study the uses of honey and beeswax and the work of bees in the fertilizing of blossoms. Have you any pictures, posters, labels, easy reading material that would be helpful in teaching any phase of bee life? My pupils are about eight years old, so can not read very difficult material, but they have a pretty good bee-vocabulary now. I shall be glad to pay one or two dollars for such material. Of course, I already have such books as 'A B C and X Y Z of Bee Culture,' and 'Honey Bees and Fairy Dust,' by M. G. Phillips. Thanking you for any information or helps, I am, Mrs. W. D. Rice, Rock Hill, S. C."

Fifteen grade school children from Dallas schools wrote for material and three of the Dallas teachers wrote for project outlines. The letter from Mrs. Rice gives us a small picture of the possibilities with our schools. What can we do to give the little children the material the teachers want them to have on the subjects of bees and honey? Mrs. Rice must have been particularly interested in bees and honey for she already had two excellent books in her library. I wish I knew how many school libraries have on their reference shelves the two books mentioned above. This would be an excellent thing for beekeepers to check on in their own community. Surely every library ought to have a few bee and honey books available to growing boys and girls. "The Drama of the Bee Hive," as written by W. H. Stacy, Extension Rural Sociologist; Fannie R. Buchanan, Extension Assistant in Home and Community Development, and F. B. Paddock, State Apiarist, Iowa State College, suggests the following books: "Honey Makers," by Margaret Warner Morley; "Spirit of the Hive," by Dallas Lore Sharp; "Life of the Bee," by Maurice Maeterlinck; "Honey Bees and Fairy Dust," by Mary Geisler Phillips.

If American Honey Institute only had the staff to carry on a survey of all libraries for the purpose of ascertaining whether these books were on hand for the grade school children and high school children to use, we could make much progress with the children. Since it can not do this, it must ask local beekeepers to assist. Now when the warm days are fast approaching and children are anxious to get outside, why don't you suggest to your educational directors or supervisors the desirability of a bee and honey study. The children would enjoy it immensely. When you suggest such a study, be sure to recommend the government film, "The Realm of the Honey Bee." This film is available to schools, clubs, or homemakers. It is sent out only upon request for special dates. Reservations should be made directly through the Office of Motion Pictures, U. S. Department of Agriculture, Washington, D. C. The film is free except for express charges incurred in its shipping.

If the children study the bees these glorious spring days, they will be so much more enthusiastic about studying honey this fall. Each one of these programs leads up to your concentrated program better known as National Honey Week. I know of no better group than children to interest in creating local activity for National Honey Week.

Get out your Honey Activity calendar and jot down the dates. They are definite-

ly decided now. National Honey Week will be observed this year during week of November 11 to 17. The revised program will be back from the printer about the tenth of May and every member of the Institute will get a copy in the printed annual report to be mailed at that time. If you are in doubt about your membership consult the Honor Roll listing which appears once a year in this journal. If you are not on the Honor Roll, it will be necessary for you to write for your copy of the National Honey Week Program.

American Honey Institute does not have adequate material for second and third grade school children. Children of this age are not particularly interested in honey recipes. The Institute can only write a special letter to teachers and suggest bee and honey contests for both the boys and girls. Outlines are available for such contests. Then the showing of the government film, "The Realm of the Honey Bee," is suggested. The teacher is told about "The Drama of the Bee Hive," and that she may have a copy free by writing Prof. F. B. Paddock of Iowa State College. You may want to write for a copy and give it to your local educational supervisor.

For several years I have been hoping that the Institute might have a special little leaflet of this nature. It may take several more years of hoping but one of these days the Institute is going to be in a position to get that type of copy written by a person trained in that art.

Coming back to March activity, it will be best to give you the secretary's report just as it was sent to Institute directors, to give you an idea of the volume handled. As usual, most of the requests received during March were for honey recipes. One California request was for a bar de luc made with honey. One of the editors was interested in honey facials so I'd like to quote her letter:

"I surely appreciated the directions for honey facials that you sent. Several of our staff have consented to try the different honey packs with a view to recommending some one or two procedures that are the most satisfactory. For this reason we would appreciate a supply of honey for this testing work." Miriam J. Williams, Field Editor, The Farmer's Wife.

The formulas for these honey facials were not originated by American Honey Institute. The Institute does not commit itself on honey facials but rather just gives the formulas as cosmeticians are recommending. A number of persons have reported on the value of such honey facials. If any of you want the formulas that have been collected, they will be mailed to you, upon request.

Four hundred and thirteen requests that required packages of material taking from 1½ cents to 18 cents postage were taken care of by American Honey Institute during March. This material went into 35 states, 6 foreign countries and the District of Columbia.

For beekeepers who want to approach their school officials on sponsoring National Honey Week, there is a special sheet of suggestions. Remember the dates for the 1934 National Honey Week are November 11 to 17 and the revised program will be available after May 10.

Secretary's Report for March

Special letters written			292
Form letters typed			40
Form letters typed			125
Form postal cards filled in			125
Manuscript typed—			
Original pages	100		
Carbon copies	258		358
Packages of material—Service Sets			*413
Stencils cut			26
Copies run from these stencils—			
In office	4613		
Outside	3000		7613
Scrap books sent out			1
Pictures for exhibits and articles			7
Articles written			1
Special recipe copy for labels			7
1 Demonstration at Guild with attend. of 200 Honey Nut Meringue Square made for Woman's Club.			46
Out-of-town Institute visitors			8

*These Service Sets were distributed as follows:

	Consum.	Special.	Prod.	Bak.
California	11	2	4	3
Connecticut	4	1	1	
District of Columbia	1	1		
Idaho			6	
Illinois	20	4	5	1
Indiana	5		1	
Iowa	1	1	5	
Kansas	1		4	
Kentucky	1			
Louisiana	1		2	
Maine	1			
Maryland	1		2	
Massachusetts	6	1	4	
Michigan	21		12	
Minnesota	44	10	24	7
Missouri	4	1		
Montana		1		
Nebraska		1	3	
New Hampshire	2		1	
New Jersey	5		1	
New York	25	4	14	
North Carolina		3		
North Dakota	4		5	
Ohio	6		2	
Oklahoma	1	1	1	
Oregon			4	
Pennsylvania	16	1	4	1
Rhode Island	3		1	
South Carolina		1		
South Dakota	1			
Texas	24	3	4	
Virginia	2		4	1
Washington	3			
West Virginia		1		
Wisconsin	27	2	4	2
Wyoming			2	
Foreign	1	2	3	

Just News

Editors

Those interested in bumblebees will welcome a book just off the press entitled, "Bumblebees and Their Ways," by Otto Emil Plath, M. A., Sc. D., Professor of Biology, Boston University. It is published by the Macmillan Company, New York.

Beekeeping and honey production in Saskatchewan have been increasing at the rate of 10 per cent a year for the past six years, and four of these years have been bad years for the beekeepers. The value of the honey crop last year was close to $100,000.

The Southeastern Michigan Beekeepers' Association will hold its spring meeting at the courthouse in Adrian, Mich., on the afternoon of May 11. A meeting of beekeepers and fruit growers will be held at Traverse City on May 22. Prof. R. H. Kelty, the new president of the American Honey Institute, will be the principal speaker.

The bee hive in the Hall of Science at the World's Fair last year was opened the other day, and it was discovered that the bees had collected nearly fifty pounds of honey during the Fair. There was a bit of mystery attached to it, too. The honey was of an unusual pinkish color, and to date experts have not been able to explain why. One of the theories advanced is that the bees fell into the spirit of the Fair, and devised a new color for honey. The bees will be back this year.

Those who have contributed to the Dr. C. C. Miller Memorial Beekeeping Library will be interested to know that a very fine collection of bee literature was recently secured for the Miller Library from the late Col. H. J. O. Walker of England, who died January 14. Mr. S. L. Odegord of Pinehurst, North Carolina, a prominent business man who died March 18, provided the funds for the purchase of the Walker Library. This fine collection of bee books with the other material in the Miller Library will stand as a monument to the beekeeping industry of the world.

In the last issue we announced that the Bee Equipment Manufacturers were enlisted in N. R. A. under the Farm Equipment Code. That is true in that the Farm Equipment Institute has accepted the Bee Equipment Manufacturers as a group and has accepted membership dues. A slight amendment in wording of the Farm Equipment Code was needed to carry the union into effect. A hearing occurred in Washington February 23 covering this and several other amendments to the Farm Equipment Code. The result of that hearing has not yet been announced from Washington.

Earl Keller, a prominent beekeeper of Medina, Mich., died February 18. Mr. Keller moved to Michigan with his parents in 1889. He took up beekeeping in 1907 and soon became one of the outstanding beekeepers of his state. One of his accomplishments was the invention of an uncapping machine consisting of two metal revolving rolls with cotter pins. Beekeepers from all over the country visited Mr. Keller's up-to-date apiary house to see this uncapping machine in action. Mr. Keller was always interested in the eradication of foulbrood and helped the state bee inspectors with inspection work. He gradually built up his apiaries to 500 colonies. He leaves a wife and son, an aged mother and two sisters to mourn his death. He will be missed greatly in his community.

About a year ago a New Correspondence Course in Beekeeping by Dr W. E. Dunham was published by the Extension Department of the Ohio State University. This course is divided into twelve lessons covering the basic phases of bee behavior as well as modern methods in apiary management. It was well received by those interested in beekeeping as is evidenced by the fact that in July and August the number of lessons sent in by students enrolled in the New Correspondence Course in Beekeeping outnumbered those sent in by students in any of the other numerous correspondence courses offered by the Extension Service, and that since then it has ranked from third to fifth. There is no enrollment fee for the course. Full particulars regarding this course may be obtained by writing to Dr. W. E. Dunham or Prof. J. E. McClintock, Extension Service, the Ohio State University, Columbus, Ohio.

Gleaned by Asking

Geo. S. Demuth

Mating Queens Above Excluder

Question.—Is it possible to have a large percentage of virgin queens mated and laying above a queen-right colony with only an excluder between?—Otto E. Nelson, California.

Answer.—During a good honey flow, it is possible to have quite a good percentage of young queens mated in an upper story above a queen-excluder over a queen-right colony. However, in many cases the young queen disappears soon after beginning to lay if the honey flow slows down or a dearth of nectar occurs. Most beekeepers prefer to make nuclei for mating young queens, since this method is more dependable.

Boiling Honey from Diseased Colonies

Question.—Would it be safe to extract the honey from food-chambers of diseased colonies, boil it, then feed it back to the bees? If so, what proportion of water should be used to thin the honey?—James Middleton, New York.

Answer.—You do not state whether this is American foulbrood or European foulbrood. If the latter, it should not be necessary to boil the honey but see that the colonies are strong and have young Italian queens. If American foulbrood, the honey can be extracted, diluted with an equal volume of water, then boiled for 30 minutes in a closed vessel such as a wash boiler with a loose-fitting lid. It would then be safe to feed back to the bees in the spring when they can fly freely every few days. Such honey should never be fed to bees for winter stores.

Price of Honey in 60-lb. Cans

Question.—Should a case of two 60-lb. cans of honey be sold at the same price as the large lots quoted on the market pages in Gleanings in Bee Culture?—Carl N. Holcomb, New York.

Answer.—The prices quoted for large lots on the market pages in this journal are usually carload or truckload lots. When you sell a case of two 60-lb. cans, the price should be more since selling in single-case lots involves considerable more expense than selling in one large lot. At least a cent a pound should be added to the price in large lots.

Effect Upon Queen of Sudden Stop in Egg Laying

Question.—On discovering European foulbrood in two of my colonies, I confined the queen of each in a second brood-chamber above an excluder and on drawn foundation. After twelve days the bees had not built combs, so the queens were unable to lay. Will this nonlaying period forced upon them damage them in any way?—L. M. McDonald, North Carolina.

Answer.—It is doubtful if the queens would be injured by being deprived of brood comb. When a laying queen is confined in a cage during the active egg-laying season, she sometimes drops several hundred eggs in the cage before adjusting herself to the new conditions. There is no conclusive evidence at hand to indicate that this injures the queen.

Treatment for Bee Paralysis

Question.—I have one colony that is badly afflicted with paralysis, and am in doubt what to do with it. Can this disease be cured? I am afraid that some more colonies may become infected if something is not done soon. Is there any danger from eating honey from a colony that has paralysis?—Albert Spiker, West Virginia.

Answer.—The term "paralysis" is no doubt applied to several maladies of adult bees. Various remedies have been suggested but until the diseases of adult bees are better understood, definite remedies can not well be given. Some recommend moving the hive to a new location, placing a similar hive on the old stand containing one or more combs, then destroying the returning bees. Often the disease disappears when this is done. Others recommend killing the queen and introducing a young queen since the disease often disappears when this is done. Often the trouble disappears without treatment, which helps to confuse the whole problem of a remedy. In some cases, many bees may be found crawling from the hive and dying in great numbers, then the trouble may suddenly disappear when settled warm weather comes. As a rule, such trouble does not spread much in the apiary, although in some cases adjacent colonies become afflicted. So far as is known, the honey stored by such colonies is perfectly wholesome and can be eaten by human beings without any danger whatever.

Colony Fails to Produce Surplus

Question.—My colony of bees has made only about two pounds of honey in the supers, yet they seem to be quite busy at work all the time. What is wrong?—W. H. Willett, Virginia.

Answer.—Failure to store surplus honey is often the result of a scarcity of nectar-bearing plants in the neighborhood, or weather conditions unfavorable for nectar secretion. In other cases it is a result of swarming just when the colony should be storing surplus honey, thus making the colony too weak to store surplus honey during the honey flow. Again, the colony may have been weakened because of a shortage of honey when it

should have been rearing large quantities of brood, by queenlessness, by a failing queen, or by one of the brood diseases. In order to store a good crop of surplus honey, there must be (1) an abundance of nectar-bearing plants in the neighborhood, (2) weather conditions favorable for nectar secretion and for flight of bees, (3) strong colonies during the time the nectar-bearing plants are in bloom, and (4) conditions in the environment of the colony which makes for the dominance of the gathering and storing instinct. If any one of these four factors are entirely absent, there can be no surplus honey stored.

Few Small Shiny Black Bees Among Italians

Question.—In one of my hives I found a few bees smaller than the rest that have shiny black bodies and their wings appear to stand up further from their bodies than on other bees. Are these sports?—Dillo Sanders, Kentucky.

Answer.—Evidently these are old bees that have lost most of their hair. Such bees appear smaller than others in the colony. As a rule, such bees have learned the trick of robbing from other colonies and have lost their hair through many encounters with the guards. The peculiar appearance of their wings was probably also brought about by their numerous encounters with guards during their efforts to steal honey from other colonies. However, bees do vary in size to some extent, there being runts among them as well as among other animals. The variation in size usually is not noticeable without making careful measurements.

Operating Distant Out-apiaries

Question.—Will you give us an outline of your system of working your colonies at a distance for comb honey without much labor?—W. P. Fritz, New Jersey.

Answer.—The bees are wintered in two stories, the upper story being well filled with honey in the fall. The first visit is made at about the time white clover begins to yield in that locality. The winter packing is taken off early in May, this work being done by others. During the first visit, the queens are found and clipped, the comb-honey supers are put on and the former second story, or food-chamber, is placed above the comb-honey supers. Each of these first supers is arranged with a runway at the side and covered with an inner cover so that the bees emerging from the food-chamber can go down into the brood-chamber through this runway, but can not go into the comb-honey super without first going to the brood-chamber. The queen is placed in the lower story. The apiaries are then left without further attention for ten days, when a second visit must be made in order to control swarming. Subsequent visits depend largely upon the character of the season and the size of the honey crop. If prospects are good for a long honey flow, colonies that are found rearing queen cells in preparation for swarming are treated by taking away the queen, destroying all queen-cells and closing the hive for ten days at which time all queen cells are again destroyed and a young laying queen introduced; or, preferably by taking away both queen and brood, giving one or two combs to catch the incoming pollen and leaving the rest of the brood-chamber vacant, then the next day giving a set of combs containing only sealed and emerging brood and introducing a young laying queen. If the prospects are for a short rapid honey flow an artificial swarm is made by shaking the bees on frames of foundation. The top chamber (food-chamber) is left in position above the comb-honey supers until most of the brood has emerged when most of the bees are shaken from their combs and the food-chambers are tiered up on other colonies to have them completely filled with sealed honey at the end of the season, or they may be set off, given a bottom and cover, to form a nucleus in which to rear a young queen. In either case, at the close of the season, the food-chambers are distributed one to each colony after the comb-honey supers are taken off. In a locality in which American foul brood is prevalent, the latter plan is preferable since there is less danger of spreading the disease by tiering up a number of hive bodies on one colony, then distributing them later. When young queens are reared in these food-chambers, they should not be taken from the hives until they are well filled with early-gathered honey. These little colonies should have so much honey that there is not much room for brood-rearing. At the close of the season, these food-chambers with their young queens are united with the established colonies. The bees are packed for winter in October and left without attention until about the first of June the next year. Some seasons swarming gives considerable trouble in spite of all that can be done, while other seasons there is but little trouble from this source. Recent experiments indicate that the labor can still be considerably reduced by forced supersedure of all queens shortly before the main honey flow.

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

MICHIGAN white comb honey. White extracted in sixties. M. H. Hunt & Son, Lansing, Mich.

FOR SALE—Clover and buckwheat extracted in 60-lb. cans. F. W. Lesser, Fayetteville, N. Y.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

FOR SALE—White and light amber extracted honey, any amount. Hyde Bros., New Canton, Ill.

OHIO'S finest extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

TUPELO HONEY—Will not granulate. Shipped in any quantity. Anthony Bros. Honey Co., Apalachicola, Florida.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FINE quality orange, palmetto and mangrove honey in new sixties. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

MICHIGAN white clover honey of finest quality in new 60-lb. cans. Also comb honey. Orval W. Dilley, Grand Ledge, Mich.

FINE supply clover comb saved for stands, non-granulated. Write Pennsylvania-Michigan Apiaries, 18 Packard Ave., Greenville, Pa.

NEW crop section comb honey, nice white stock securely packed in carrier crates of four and eight cases. The Colorado Honey Producers' Association, Denver, Colo.

NEW crop Michigan clover honey, as produced by E. D. TOWNSEND & SONS, Northstar, Michigan, should be ready for the market in July. Speak for your requirements.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

MICHIGAN'S finest well ripened white honey in new 60's. Sample, 15c. Jay Cowing, Jenison, Mich.

CHOICE white clover honey, new sixties. State amount required. Woodland Apiaries, Howell, Mich.

WHITE clover extracted, 7c; light amber, 6½c; amber, 6c; No. 1 sumac comb, amber or buckwheat, $2.25 case. C. B. Howard, Geneva, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—Montana white clover honey, car lots. Morrison, 548 West 22nd St., New York, N. Y.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

FOR SALE

SAVE queens. Safin cages now 15c; ten for $1. Allen Latham, Norwichtown, Conn.

FOR SALE—Eight-frame hives with comb and shallow super. Like new, cheap. C. J. Baldridge, Kendaia, N. Y.

FOR SALE—Comb foundation at money-saving prices. Plain, wired, and thin section. Wax worked at lowest prices. E. S. Robinson, Mayville, N. Y.

FOR SALE—200 shallow extracting supers, 16¼ x 20, with 8 drawn combs. Never has been any American foulbrood in my yards. Yearly inspected. John J. Lewis, Lyons, N. Y.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

READY WIRED frames. Just what you have been looking for. Each frame contains four horizontal wires, permanently fastened. Shipped in the flat. Ask for literature. A. E. Wolkow, 384 State St., Hartford, Wisconsin.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE—Four-frame Root automatic extractor. Like new. Hodgkin Apiaries, Rochester, Ohio.

FOR SALE—Two-frame reversing extractor (Root). New, never was uncrated. Price, $22. William Sellars, Box 253, Lebanon, Tenn.

ELECTRICAL comb honey cutting knives, uncapping knives, $10.00 each; with thermostat, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

FOR SALE—4 beagle pups, 3 months old, from thoroughbred registered field champion parents, sire and dam extra good. Asa Phillips, Greenfield, Mass.

FOR SALE—My automobiles, both in fine condition. 5-passenger Willys-Knight sedan, $250; 2-passenger Oldsmobile coupe, $340. Reasonably priced for cash or trade for honey. Write Fred. W. Muth. 229 Walnut St., Cincinnati, Ohio.

B. B. PLIERS & HIVE TOOL COMBINED. Danger of being stung greatly reduced. You will find them very practical and handy tools. Never be without them after once adopted. Delivered by mail for $1.00. California Bee & Tool Co., 810 West Pedregosa St., Santa Barbara, Calif.

BEE SUPPLY SPECIALTIES

METAL EYELETS in your frames will stop the WIRE SAG which is responsible for most SAGGED COMBS. METAL EYELETS, per 1000, 60c. Handy tool for inserting eyelets, 25c. Superior Honey Co., Ogden, Utah.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from diseases, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

HIGH GRADE bees, in good standard hives, guaranteed no disease, at bargain prices. George Schilling, State Center, Iowa.

ONE HUNDRED colonies of bees in good condition, guaranteed free from diseases. Harry Spooner, Stephens, Arkansas.

TRY Townsend for your May or June package bees, or queens. Very prompt service guaranteed. E. D. Townsend, Northstar, Michigan.

FOR SALE—100 colonies of bees. Mostly 10-frame, some eight; with equipment for extracted honey. Priced to sell. Certificate furnished. Mike Rigik, Kirby, Wyo.

THREE-BANDED Italian bees and queens that are real honey gatherers and gentle to work with, at code prices. Alamance Bee Co., Graham, N. C.

BETTER PACKAGE BEES—Better queens for 1934. Vigorous, gentle, disease resistant three-banded Italians. Best honey producers. Write for full information and prices. H. C. Short, Fitzpatrick, Ala.

GOLDEN Italian queens that produce good workers, gentle to handle. Safe arrival and satisfaction guaranteed; at code prices. Tested, $1.70. I can mail these when weather is warm enough. Untested about May, 85c. D. T. Gaster, Rt. 2, Randleman, N. C.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. The stock has been bred and selected in the North the past 31 years for good winterers, hustlers, gentleness and fine color. Emil W. Gutekunst. Colden, N. Y.

"SHE-SUITS-ME" Italian queens at code prices. Allen Latham, Norwichtown, Conn.

FOR SALE—Ninety colonies bees and other equipment. Certificate of inspection furnished. Bruner, 3836 N. Kostner Ave., Chicago, Ill.

CAUCASIAN queens and bees for spring delivery. Select untested queens, 1 to 9, 85c each; 9 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each. Package bees at code prices. Safe arrival and satisfaction. Lewis & Tillery Bee Co., Greenville, Ala.

EXTRA yellow Italian queens. Spring is late but hope to start mailing untested early in May at code prices, 1 to 9 queens, 85c each; 10 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each. Same service and guarantee. Hazel V. Bonkenmeyer, Randleman, Rt. 2, N. C.

CAUCASIAN queens and bees for May delivery. Select untested queen, 1 to 9, 85c each; 9 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each. 2-lb. package with queen, 1 to 9, $2.65 each; 10 to 49, $2.55 each. 3-lb. package with queen, $3.40 each; 10 to 49, $3.30 each. Write your wants to P. B. Skinner Bee Co., Greenville, Ala.

THE NORMA ROY APIARY—Italian bees with untested queen, combless. Code prices. 1 to 9, $2.65; 10 to 49, $2.55. 2 lbs. bees with queen, 1 comb brood, 1 to 9, $3.15; 10 to 49, $3.05. For each additional pound bees add 80c; for each additional comb brood, add 50c. By parcel post, 20c more plus postage. Safe delivery. All loss replaced and a health certificate with shipment. Norma E. Roy, Hessmer, La.

SITUATION WANTED

SINGLE man, experienced in bees and poultry, two seasons' experience with queen breeder, desires position as helper. Will go anywhere. Available June 15. Crosby County Hatchery, Crosbyton, Texas.

HELP WANTED

MAN wanted to run bees on shares. Must have some experience in handling bees. Care of Gleanings in Bee Culture, Medina, Ohio.

ROOT EXTRACTOR COLUMN

FOR SALE—A 4-frame multiple reversing hand extractor. Used very little. Good as new. A bargain at $40.00. Claud Lane, 1201 Walnut St., Valley Falls, Kansas.

FOR SALE—A No. 4425 Root 4-frame power extractor, has been used only six years. Is in good mechanical condition. Write Russell D. Smalley, Grand Junction, Iowa.

MISCELLANEOUS

WANTED—Old style (hand) roller for making foundation. Fred S. Davis, Littleton, Colo.

WANTED—Michigan apiary to buy or lease by experienced beekeepers. Murray's Golden Apiaries, Clarion, Mich.

WANTED—Machinery for making bee hives and foundation, electric driven. Need lock-corner machine. Lee Lantz, Scooba, Miss.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

TOO LATE FOR CLASSIFICATION

WILD red raspberry, clover, basswood, white comb; extra fancy, $2.50 per case. Extracted, unexcelled, in 5-lb. pails, 8c; in 60s, 7c. Buckwheat, $1.85; 5¼c. Murray's Golden Apiaries, Clarion, Mich.

QUEENS

Pure Italian stock, heavy honey getters, gentle to handle. Any number, any day.

Prices to June 1st—1-9, 85c; 10-24, 80c; 25-49, 75c; 50-99, 70c; 100-249, 63c; 250 up, 59½c.
After June 1st—1-9, 70c; 10-24, 65c; 25-49, 55c; 50-99, 50c; 100-249, 49½c; 250 up, 41½c.

✪ ✪

Louisiana Southern Bee Farm
Route 2. BATON ROUGE, LA.

Italian Queens

High Grade Superior Quality.
85c each, 10 for $8.00, 25 for $18.75.
G. H. MERRILL
Route 1, Greenville, S. C.

Golden Italian Queens and Light Yellow Bees

Noted for their gentleness and honey gathering and disease resistance. Queens, 1 to 9, 85c each; 10 to 24, 80c; 25 to 49, 75c each. 2-lb. package with young queen, 1 to 9, $2.65; 10 to 49, $2.55. Satisfaction guaranteed in U. S. and Canada.
E. A. SIMMONS APIARIES
Powell Owen, Mgr. Greenville, Ala.

Tennessee

Our foundation stock: John M. Davis 3-banded Italian breeding queens, the "queens that made Tennessee famous." Our queens are personally reared from the best breeding mothers to be obtained, and are sure, and guaranteed to please you. Ready about May 15. Code prices.

Noble S. Gladish, Pulaski, Tenn.

Gaspard's High Quality Golden and Three-handed Queens and Package Bees for Spring 1934

(CODE PRICES)
(NUCLEI PACKAGE WITH QUEENS) NOVEMBER 1 - MAY 31.

	1 to 9.	10-49.	50 or more.
1-comb 2 lbs. of bees net	$3.15	$3.05	$2.95 each.
1-comb 3 lbs. of bees net	3.95	3.85	3.75 each.
1-comb 4 lbs. of bees net	4.75	4.65	4.55 each.
2-comb 2 lbs. of bees net	3.65	3.55	3.45 each.
2-comb 3 lbs. of bees net	4.45	4.35	4.25 each.
2 combs 4 lbs. of bees net	5.25	5.15	5.05 each.

(COMBLESS PACKAGES WITH QUEENS) NOVEMBER 1 - MAY 31.

	1 to 9.	10-49.	50 or more.
2-lb. packages bees net	$2.65	$2.55	$2.45 each.
3-lb. packages bees net	3.40	3.30	3.20 each.

QUEENS—NOVEMBER 1 - MAY 31

1 to 9	10 to 24	25 to 49	50 or more
85c	80c	75c	70c each

(Discount from price of 50—10% for 100-249; 15% for 250 or more—Packages or Queens.)
18 years' experience with queen breeding and package shipping. Prompt and efficient service, safe arrival and satisfaction guaranteed, and a health certificate with each shipment. Bees shipped when you want them any time after April 1st. 20% books your order, balance at shipping time.

Address J. L. Gaspard, Hessmer, Louisiana

ULTRA VIOLET RAY TREATED QUEENS—U. S. Patent No. 1868042

They mean more dollars to you. They produce gentler bees and the queen is more prolific by from 20 to 40% than those untreated. At no advance in price over the untreated.

——QUEENS——

1-9	10-24	25-49	50-99	100 or more
85c	80c	75c	70c	63c

2-lb. Pkg. Bees with U. V. Queen

1-9	10-49	50-99	100-249	250 or more
$2.65	$2.55	$2.45	$2.20½	2.08½

3-lb. Pkg. Bees with U. V. Queen

1-9	10-49	50-99	100-249	250 or more
$3.40	$3.30	$3.20	$2.88	$2.72

THE FRED W. MUTH CO., Pearl and Walnut St,. Cincinnati, Ohio

Thrifty Bees

✪ Pile up extra supers of honey. That's why they are guaranteed to please.

✪ We ship over-weight packages of young **THRIFTY**, three-banded Italian bees that build powerful colonies in time for your honey flow. Our shipping crates are light but strongly constructed. **THRIFTY** bees are Accredited and Certified by the Alabama Department of Agriculture.

✪ Forty-three years' experience enables us to serve you better.

✪ Write for free booklet giving full information and lowest code prices on package bees and queens.

W. J. Forehand & Sons

FORT DEPOSIT, ALABAMA

Breeders since 1892.

CAUCASIANS

Extra gentle, prolific, long tongue, little swarming, dependable workers—10% to 40% ahead of Italians.

Foundation stock from the mountainous province of Terek, Caucasus.

CARNIOLANS

prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolan queens headed colonies producing an average of 435 lbs. per colony over whole yard.

Lowest Code prices on queens. Booking orders now for June delivery. Untested queens, 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each.

Both races withstood the past severe winter much better than Italians. Both races build up more rapidly during the unfavorable springs of our eastern states and are ready for the early flow. Ask for free circular.

ALBERT G. HANN, Glen Gardner, New Jersey.

MOTT'S NORTHERN-BRED ITALIAN QUEENS

Guaranteed purely mated. May, 1, $1.00; 3 or more, 90c each. June, $1.00; 2 or more, 75c each. Select tested, $2.00, $3.00, 5.00. Free list with testimonies. Satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Mich, U. S. A.

FIRST-CLASS JOB PRINTING.
THE A. I. ROOT CO., MEDINA, O.

TOLD BY THE JAY

(Continued from page 296.)

very particular about. He never gave a swarm away. Just as sure as he did that swarm as well as the swarm in the gum they came from would never do any good again. But when he got a dollar or something worth a dollar the bees worked all right. I told her I noticed that the habit of not giving anything away had descended to the second generation. She said, "Another thing, I never like to begin any work on Friday." "I said, "Why pick on Friday? You do not like to begin any work on any other day either, do you?" She intimated I was sarcastic.

Three-banded Italian Queens and Package Bees for Sale

Accredited and certified by the Alabama Department of Agriculture. Selected Queen Bees, 1 to 9, 85c each; 9 to 24, 80c each. Two-pound packages, 1 to 9, $2.65 each; 10 to 49, $2.55 each. Safe arrival and entire satisfaction guaranteed.

M. C. BERRY, JR.
14 Galena Ave. Montgomery, Ala.

PATENTS—C. J. WILLIAMSON
Attorney for The A. I. Root Co.
Munsey Bldg. Washington, D. C.

12 Month Subscription with Bee Primer $1.00

American Bee Journal—monthly; published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey. **SAMPLE COPY FREE.**

Full 12-month subscription, with **BEE PRIMER**—22-page, illustrated booklet to help the beginner—**BOTH FOR $1.00.** Combined with Gleanings in Bee Culture—both magazines and Primer, **ONE YEAR, $1.60.** This offer good only in the United States. Address—

AMERICAN BEE JOURNAL
HAMILTON, ILLINOIS

TALKS TO BEGINNERS

(Continued from page 295.)

is placed on the old stand. The caged queen is then pushed into the entrance of this new hive on the old stand. The swarm which may have clustered on a bush near by will return to the hive with the caged queen. A little later when most of the bees have entered the hive the queen should be released from the cage and allowed to run in with the bees.

Beginners who are having their first season's experience with bees may be a bit confused with all of these attempted explanations and instructions. Don't get discouraged. The best beekeepers in the country were at one time beginners. The writer has a brother in Ontario, Canada, now a successful commercial beekeeper with over 300 colonies, who started with one colony of bees.

To summarize briefly, the beginner must learn to do the right thing at the right time in managing his bees. (1) Assuming that each colony is strong in bees there must be an ample amount of honey in each hive, at least 15 pounds. If there is less

(Continued on page 311.)

SMITH'S

bees and queens are as good as money can buy and at lowest Code prices. 2-pound packages with queens, 1-9, $2.65; 10-49, $2.55; 50-99, $2.45; 100 up, $2.20½. Three pounds with queens, 75c more each. Selected queens, 1-9, 85c; 10-24, 80c; 25-49, 75c; 50-99, 70c; 100 up, 63c. After June 1: 1-9, 70c; 10-24, 65c; 25-49, 55c; 50-99, 50c; 100 up, 45c.

N. B. Smith & Co.

CALHOUN ALABAMA

Groom's

Northern-bred Queens for 1934 are from the finest Italian stock, bred for honey-getting and gentleness. Our queens are very prolific. They should improve your colonies and increase your profits. There is no disease in my yards. Safe arrival and pure mating guaranteed. Lowest code prices. See large ad in April Gleanings.

WILLIE GROOM, Gashland, Mo.

PURE ITALIAN BEES

At Code Prices, Nov. 1-May 31.

With Select Queen:	1-9	10-49	50-99
2-lb. combless	$2.65	$2.55	$2.45
3-lb. combless	3.40	3.30	3.20
2-lb. & 1-fr. nucleus	3.15	3.05	2.95
2-lb. & 2-fr. nucleus	3.65	3.55	3.45

If larger packages are wanted, add eighty (80) cents for each additional pound of bees. Every package packed overweight.

SELECT UNTESTED QUEENS

1-9	10-24	25-49	50-99
85c ea.	80c ea.	75c ea.	70c ea.

(Discounts from prices of 50:—10% for 100-249; 15% for 250 or more packages or queens.)

Our guarantee: Quality-service-safe delivery, backed by years of experience and A-1 service. Send in your order now. Circular free.

CLOVERLAND APIARIES

HAMBURG, LA., U. S. A.

Texas Package Bees

SAVE ON EXPRESS CHARGES

We are located 50 miles northeast of Dallas, Texas. 12 of our 3-pound packages ready to go by express weigh 108 lbs. 2-pound packages, 1 lb. less each package.

2-lb. packages with queens, 1-9, 2.65; 10-49, $2.55; 50-99, $2.45. 3-lb. packages with queens, 1-9, $3.40; 10-49, $3.30; 50-99, $3.20. 100 packages, 10% discount; 250, 15%. Every guarantee pertaining to package bees.

PURE ITALIAN STOCK

GOOCH APIARIES

FARMERSVILLE TEXAS

Bees & Queens

AT LOWEST CODE PRICES

Pure Italian bees and queens. I ship in light weight cages, all packages full weight. young baby bees and queens. I guarantee all queens purely mated. Safe arrival and satisfaction. If not, return them. I will replace or refund money.

PRICES

Untested queens, 1 to 9, 85c each; 10 to 24, 80c each; 25 to 49, 75c each. Tested queens, double in price. 2-lb. pkg. with queens, 1 to 9, $2.65 each; 10 to 49, $2.55 each; 3-lb. pkg. with queens, 1 to 9, $3.40 each; 10 to 49, $3.30 each. All packages F. O. B. shipping point. State health certificate furnished.

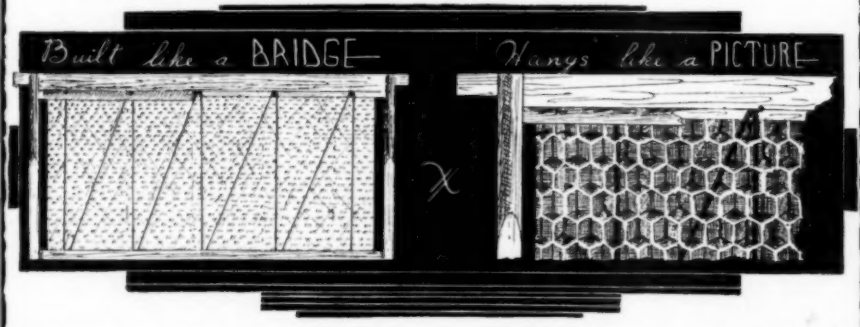
John A. Norman, Ramer, Ala.

Hang It All!

You can not pull yourself up by your "boot straps," however, you can hang this most modern wired foundation by its straps. See them at the top edge of the foundation.

FOUR POINTS OF MERIT:

(1) It can not come loose from the frames.
(2) Diagonal wires prevent centrifugal fracture when extracting.
(3) Easily attached to frames.
(4) Made from the finest non-sagging wax.



PRICES, WIRED "HERCULES" MEDIUM BROOD FOUNDATION

Size.	10 sheets	50 sheets	200 sheets	Av. sh. to lb.
8 x 16¾	90c	$4.10	$16.00	7 plus
8 5/8 x 16¾	95c	4.35	17.00	7

"MILL RUN"—95% PERFECT SHEETS

	8"x16¾"	8 5/8"x16¾"
200 Sheets Hercules Medium Brood, Plain	$12.00	$13.00
50 Sheets Hercules Medium Brood, Plain	3.10	3.35
200 Sheets Medium Brood, Plain	12.00	13.00
50 Sheets Medium Brood, Plain	3.10	3.35

Write for our complete catalog of money-saving supplies.

Have your wax worked into foundation at our low working prices.

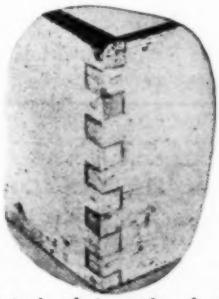
We will render your old combs and cappings into wax at prices you can afford; 2c per lb. for wax rendered on shipments of 100 lbs. of comb or cappings, 3c per lb. on less than 100 lbs.

We will buy your white or amber extracted honey. Cash or trade.

The Fred W. Muth Co.

Pearl and Walnut Sts. Cincinnati, Ohio

◆ ◆ JUST A FRIENDLY REMINDER TO OUR DEALERS ◆ ◆



Actual photograph of a corner of a Root hive that had been in use 25 years.

Root Dealer

Please remember that back of every article of Root Quality Bee Supplies that you sell are not only years of study and practical experience, but

We Take Pleasure in Reading the Numerous Unsolicited Letters Like These:

"I like your bee supplies better than any other supplies. These small orders I send to you are a small portion of my supplies. I buy them from your dealer, W. E. Merritt, Mt. Airy, N. C."—A. E. T., Virginia.

"I have always used your bee supplies and am so well satisfied with them that I haven't tried any other make. I have 52 colonies of bees. I will be buying more supplies shortly of my dealer, Wilson & Girod, at Van Wert, Ohio.—A. M., Ohio.

"I wish to thank you for the promptness with which you sent the queen excluder. In the few dealings I have had with The A. I. Root Company I have received only the best of service."—A. H., New York.

"I have bought bee supplies from A. I. Root Company for years and I think they are the best I have ever used."—R. G. W., Ohio.

"I am enclosing a packing slip of some supplies I purchased. I can assure you it has been a pleasure to assemble these supplies for the material and workmanship was perfect."—G. E., New Jersey.

THE ROOT GUARANTEE OF ABSOLUTE SATISFACTION OR MONEY BACK

A. I. Root's Original Guarantee was the GOLDEN RULE Good then—good now.

YOUR ROOT DEALER

will gladly serve you. Hives, Supers, Sections, Frames, Foundation, Smokers, Extractors, Tools, Honey Selling Helps, Labels, Books.

Root QUALITY BEE SUPPLIES

The A. I. Root Co.

MEDINA, OHIO

Root QUALITY BEE SUPPLIES

HEALTHY THREE-BAND

Italian Bees & Queens of Quality

No disease ever in this part of Alabama. We give you service and satisfaction.

CODE PRICES

Express Collect

PACKAGE BEES

2-lb. pkg. with queen, 1 to 9, $2.65; 10 to 49, $2.55; 50 or over, $2.45.

3-lb. pkg. with queen, 1 to 9, $3.40; 10 to 49, $3.30; 50 or over, $3.20.

QUEENS

1 to 9 ..... 85c
10 to 24 ..... 80c
25 to 49 ..... 75c
50 up 70c

For shipment by parcel post, add 20c per package, plus postage.

J. F. McVAY, JACKSON, ALA.

N. Norman's

Package Bees and Queens

Three-banded Italians Only

They satisfy. Why? Because they are bred from the very highest quality of Italians obtainable and are reared by men who know how. They will prove to your satisfaction. When you realize how our 3-band Italian queens will help to increase your honey profits, you will want no other kind. I have spared neither labor nor expense to make them the best. You take no risk in buying **NORMAN'S** queens and bees. If you are not satisfied with them I will replace them or refund your money. Isn't this a fair proposition to any one that purchases queens and bees? I am in position to take care of your orders.

	1-9	10-49	50 or more
2-lb. pkgs. with queen	$2.65	$2.55	$2.45
3-lb. pkgs. with queen	3.40	3.30	3.20

	1-9	10-24	25-49	50 or more
Queens, unt.	$.85 ea.	$.80 ea.	$.75 ea.	$.70 ea.

Tested queens double the price.

All packages F. O. B. Express. I guarantee state health certificate, full weight of bees, light cages, safe arrival in U. S. and Canada and satisfaction.

The Norman Apiaries, Lapine, Ala.

N. Norman, Mgr.

QUEENS - QUEENS

Untested 3-banded Italians, 1, 85c; 10, $8.00; 25, $18.75. June first, 1, 70c; 10, $6.50; 25, $13.75; 50, $25. Package bees with queens: 2 lbs., $2.15; 3 lbs., $2.80. Our strain of Italians has stood the test and met with the approval of many of the foremost beekeeping authorities. Hardy, prolific, good honey gatherers.

White Pine Bee Farms, Rockton, Pa.

With Gleanings since 1911.

. . . . . .

. . . . Queens . . . .

. . . . Three-banded Italians . . . .

Reared in standard nuclei with an abundance of Mother Nature's own feed to develop on. Code Prices.

. . . . . Packages . . . . .

Don't delay ordering. Get your order in before the rush and be sure of shipment when you want them. We are fully prepared to make prompt shipment. Code prices.

URIAH APIARIES

BOX 67. URIAH, ALABAMA

FOR SALE

PURE ITALIAN BEES & QUEENS

The Red Clover and Bright Kind.

1 to 9, each $0 95
10 to 24, each ..... .80
25 to 49, each ..... .75
1 lb. bees with young queen .. 1.85
2 lbs. of bees with young queen 2.65
3 lbs. of bees with young queen 3.40

Write us your wants. We will please you.

GRAYDON BROS.

Route 2. GREENVILLE, ALA.

Get Running's Bees

And Get Honey — They Satisfy

PACKAGES AND QUEENS

The kind WE use in our extensive Michigan Apiaries where WE produce honey by the carload.

ALL ITALIAN STOCK

Service guaranteed. Stock bred for honey-getting and gentleness. Apiaries accredited and certified by Alabama Department of Agriculture. Get our free circular. YOU can now get RUNNING'S Bees and Queens as cheap as others. Minimum Code Prices apply. All bees and queens shipped from our Alabama Apiaries.

DAVID RUNNING APIARIES

Sumterville, Alabama, or Filion, Mich.

TALKS TO BEGINNERS

(Continued from page 307.)

than this amount, feeding should be done. If combs of honey are not available, feed sugar syrup consisting of two parts of sugar to one part of water, either by weight or by measure, directions for feeding having been given in these Talks in the April issue.

(2) Populous colonies will doubtless need more comb space, and this can be supplied by adding a super to each colony. If drawn combs are not available, use frames containing full sheets of foundation. It is well to raise two or three combs of brood from the lower hive, into the super, placing these combs in the center of the hive, and filling in the remaining space with frames containing full sheets of foundation. This will encourage the bees to enter this super.

(3) It is advisable to control swarming. The most important factor in swarm control is providing ample comb space so that the brood chambers may not become congested. When a one-story hive becomes too small to hold a populous colony of bees, it is only natural that the colony will swarm. To prevent swarming, simply give the colony a larger home by adding another super.

Middle Tennessee Apiaries

offers leather-colored Italian queens bred from mothers imported from northern Italy.
1 to 9, at 85c; 10 to 24, at 80c; 25 to 49 at 75c.
50 or more at 70c.

JOE B. TATE & SON
1029 Lischey Ave. Nashville, Tenn.

Norman Bros.'

Bright 3-banded Italians

Mr. Beekeeper, our bright 3-banded Italians are bred for quality rather than quantity. You will be pleased with our large yellow selected honey-gathering strain. They will build up and prove to your satisfaction and help to increase your honey profits. When you introduce **NORMAN BROS.'** queens you can feel assured you have a queen who will do her duty, backed by years of improving and selecting from the finest mothers mated to selected drones. Our aim is, if better queens and bees are to be reared we will rear them. Every queen guaranteed purely mated, safe arrival and satisfaction.

PRICES APRIL AND MAY

	1-9.	10-24.	25-49.	50-100.
Untested queens...	$0.85	$0.80	$0.75	$0.70

Tested queens, double the price of Unt. Queens.

PRICES OF PACKAGES WITH QUEENS.

	1-9.	10-49.	50 or more.
2-lb.	$2.65 ea.	$2.55 ea.	$2.45 ea.
3-lb.	3.40 ea.	3.30 ea.	3.20 ea.

All packages F. O. B. shipping point. We guarantee state health certificate, full weight of bees, light weight cages and safe arrival in U. S. A. and Canada.

Norman Bros. Apiaries, Ramer, Ala.

Howell's Queens

PAY YOU A PROFIT.
High quality three-band, raised right.
1 to 9, 85c; 10 to 24, 80c; 25 to 49, 75c ea.
D. W. HOWELL, SHELLMAN, GA.

HONEY LABELS, MANY DESIGNS
THE A. I. ROOT CO., MEDINA, OHIO.

HONEY BEES APIARIES

Queens, Packages, Bees, Nucleus

All pure Italian. Money-back guarantee. Honey-gathering strain. Untested queens, 85c each; ten, 80c. Mail prepaid. 2-lb. combless pkg. with untested queen, $2.65; ten, $2.55 each; 3-lb. pkg. with untested queen, $3.40; ten, $3.30 each. Nuclei with 1 comb 2 lbs. bees and untested queen, $3.15; ten or more, $3.05 ea.

Ready in April. E. W. PETERSON, SANDWICH, ILL.

HOW ARE YOUR QUEENS?

Are your colonies weak and run down? Brood in only a few combs? Ready to double up any day? Requeen and put new life into them. Much has been said about queens, but

FOREHAND'S 3-BANDS ARE BRED RIGHT.

Untested queens, 1 to 9, 85c; 10 to 24, 80c; 25 to 49, 75c; 50 or more, 70c.
2- lb. pkg. of bees with queen, 1 to 9, $2.65; 10 to 49, $2.55; 50 or more, $2.45.
3-lb.. pkg. of bees with queen, 1 to 9, $3.40; 10 to 49, $3.30; 50 or more, $3.20.

N. FOREHAND, DE LAND, FLORIDA, ROUTE 2

Finest Italian Bees and Queens

FRESH FROM OUR OWN YARDS ON TIME

BEES and QUEENS when you NEED THEM mean your honey crop. Try our reliable and fast service—finest quality—Superior queens and young bees—Our supply is large—light crates reduce express—safe delivery—full weight packages and we guarantee satisfaction.

SELECT QUEENS PREPAID TO YOU.

Shipment April 1st and thereafter:		Shipment June 1st and thereafter:	
1 to 9	Each 85c	1 to 9	Each 70c
10 to 24	Each 80c	10 to 24	Each 65c
25 to 49	Each 75c	25 to 49	Each 55c
50 or more	Each 70c	50 or more	Each 50c

PACKAGE BEES—EXPRESS CHARGES COLLECT

Shipment April 1st to June 1st. 2-lb. Package with Queens—		Cheaper after June 1st. 3-lb. Packages with Queens—	
1 to 9	Each $2.65	1 to 9	Each $3.40
10 to 49	Each $2.55	10 to 49	Each $3.30
50 or more	Each $2.45	50 or more	Each $3.20

For each additional pound bees add 80c. For queenless packages deduct price queens. For parcel post shipment add 20c a package—double screening. For from 100 to 249 packages or queens deduct 10 per cent from minimum prices. For from 250 or more packages or queens deduct 15 per cent from minimum prices. NO DISEASE KNOWN HERE.

CITRONELLE BEE CO., INC., CITRONELLE, ALABAMA

QUEENS 3-BANDED ITALIANS PACKAGES

AT CODE PRICES

Write for descriptive circular. Air—Postal—and Foreign Rates.

RUSH ORDERS—24-HOUR SERVICE

Wire Us at Morgan City. We support the American Honey Institute. Do You?

QUALITY — HONESTY — SERVICE

EELLS HONEY & BEE CO., MORGAN CITY, LOUISIANA

Package Bees, Nucleus Queens

and Beekeepers' Supplies

We give you honest service, dependable quality and low prices. Package bees and nucleus shipped express, queens via mail, prepaid. Hives and hive parts shipped freight collect unless express or parcel post shipment is requested.

Our bees are pure Italian, beautiful, gentle and of a good honey-gathering strain.

2-lb. combless package with unt. queen, $2.65 each; ten for $2.55 each; 3-lb. pkg. with unt. queen, add 75c.

2-frame nuclei with unt. queen, $2.85. Ten for $2.75 each. 3-frame nuclei, add 75c.

Queens as fine as the finest, 85c each, or 10 at 80c each. Fifty or more at 70c each.

Safe delivery guaranteed on all package bees, nuclei and queens. Prices will be lower after June 1st. Look up any code list or write us.

Hives and hive parts. Dovetail 10-fr. bodies, standard make in every way, 40c each; with frames, 75c each; 10, $7.00. Extracting supers without frames, 30c; 10 for $2.80. With frames, 55c, or 10 for $5.25. Metal roof covers and inner covers, 75c each. Reversible bottoms, 50c each, or 19 for $4.80. Hoffman frames, 19-inch top-bar with wedge for foundation, solid or split bottom-bar, 100, $2.80; 500, $12.00; 1000, $23.00. Extracting frames, 100, $2.40; 500, $10.50; 1000, $17.50. Sample frame sent to any address for 10c.

Price list of other items sent on request. We have the finest low priced hives and hive parts made. All orders appreciated.

Crenshaw County Apiaries

RUTLEDGE ALABAMA

PURE ITALIANS

AT MINIMUM PRICES FIXED BY CODE
PACKAGES WITH SELECT QUEENS

	1-9.	10-49.	50-99.
2-lb. combless	$2.65	$2.55	$2.45
3-lb. combless	3.40	3.30	3.20
2-lb. and 1 fr. nucleus	3.15	3.05	2.90

For additional pounds of bees, add 80c each. For additional frames of brood, add 50c each. Select untested queens at code prices.

Large enough to give you prompt, efficient service. Small enough to give your order personal attention. Over ten years' experience.

Mayeux Bee Farm

Alex. L. Mayeux, Prop. HAMBURG, LA.

GOLDEN ITALIANS

"Remember well and bear in mind,
Better bees and queens are hard to find."

Ours are those large, yellow, gentle bees that are such excellent honey producers. Our queens are large, uniform, and very prolific. Caged the day shipped and reach their destination fit as a fiddle and ready to lay.

We have been shipping package bees 8 years and have satisfied all our customers with our quality product and promptness. Code prices. Write for descriptive price list.

STEVENSON'S APIARIES, WESTWEGO, LA.

B? B? B? B?
Brower Bigger Better Bees

In our many years of carefully selecting and breeding from the best each year, our breeding career has always been to breed bigger, better bees, with all good qualities as nearly perfect as possible, such as honey production, thriftiness, gentleness, size and color, and all other good points that we have found to be bred in bees, by our long careful breeding experience. Beekeepers in the U. S. A. and Canada: We solicit your business for 1934, large or small, on the platform that we have good bees and queens to offer you for your money; that have been tested and proven. that they are as good as money can buy. Quality first is what we aim to give you. Prompt service, honest dealing, and the word you are satisfied. must be on the end of every deal, whether you order one queen, one package, or hundreds. We are going to see that you are satisfied. If not please feel free to tell us. Safe arrival guaranteed in U. S. A. and Canada. Health certificate with each shipment. All package bees and queens caged fresh in the A. M of the day they are shipped, and they leave our shipping point at 1 o'clock the same day on a fast train. Feeder cans not placed in packages until they reach our shipping point. The most northern shippers in state. This saves you express. Orders filled promptly day after received.

——CODE PRICES——

Packages with Queens to May 31st.	1 to 9	10 to 49	50 or more
Two pounds	$2.65	$2.55	$2.45
Three pounds	3.40	3.30	3.20

Select Queens..1 to 9, 85c; 10 to 24, 80c; 25 to 49, 75c; 50 or more, 70c.
Select Tested, double the price of untested.

Telegraph and Express Office GARDEN CITY, ALA. **BROWER BEE CO, Bangor, Ala.**

Italians or Caucasians

To my customers: Quality and service alone count this year. I agree to give this to the last degree, backed by my 20 years' experience.

Will exchange a limited number of packages for honey. Terms to reliable parties. Code Prices.

H. E. GRAHAM, CAMERON, TEXAS

In a Hurry, Let Us Serve You Quickly

GENUINE 3-BANDED ITALIAN BEES AND QUEENS. Strong young bees and select queens of superior quality—efficient service—safe delivery—full weight—good workers—light cages—satisfaction.

SELECT QUEENS PREPAID TO YOU.

Shipment April 1st and thereafter:		Shipment June 1st and thereafter.	
1 to 9	Each 85c	1 to 9	Each 70c
10 to 24	Each 80c	10 to 24	Each 65c
25 to 49	Each 75c	25 to 49	Each 55c
50 or more	Each 70c	50 or more	Each 50c

PACKAGE BEES—EXPRESS CHARGES COLLECT

Shipment April 1st to June 1st. 2-lb. Packages with Queens—		Cheaper after June 1st. 3-lb. Packages with Queens—	
1 to 9	Each $2.65	1 to 9	Each $3.40
10 to 49	Each 2.55	10 to 49	Each 3.30
50 or more	Each 2.45	50 or more	Each 3.20

For each additional pound bees add 80c. For queenless packages deduct price queens. For parcel post shipment, add 20c a package—Double screening. For from 100 to 249 packages or queens deduct 10 per cent from minimum prices. For from 250 or more package or queens deduct 15 per cent from minimum prices. NO DISEASE KNOWN HERE.

Instructions for introducing bees and queens accompany each shipment.

HOLDER APIARIES, CITRONELLE, ALABAMA

Better Bees for 1934

APRIL DELIVERY

Code Prices

2-lb. Package with Queen

1 to 9 ..... $2.65 each
10 to 49 ..... 2.55 each
50 or more .... 2.45 each

3-lb. Packages with Queens

1 to 9 ..... $3.40 each
10 to 49 ..... 3.30 each
50 or more .... 3.20 each

Geo. A. Hummer & Son
Prairie Point, Miss.

California Package Bees

With uniform prices set by Code, quality and service are still to be considered when placing your order for Package Bees and Queens.

Pure Italian stock, gentle, uniform, lowest transportation charges, safe arrival, satisfaction, that's our guarantee.

CODE PRICES

Packages (with queens) Nov. 1 - May 31

	1-9	10-49	50 or more
Two-pound	$2.65	$2.55	$2.45
Three-pound	3.40	3.30	3.20

Queens—November 1 - May 31

1-9	10-24	25-49	50 or more
$.85	$.80	$.75	$.70

(Discounts from price of 50—10% for 100-249; 15% for 250 or more—Packages or Queens).

J. E. WING

COTTONWOOD CALIFORNIA

——TIME JUST RIGHT FOR——

Merrill's Quality Bees and Queens

——ITALIAN STOCK NOW READY——

Have you used any of the 400,000 queens and 150,000 packages of bees we have supplied beekeepers? If not, why not? All orders promptly handled.

QUEEN PRICES — TO JUNE FIRST

1 to 9	10 to 24	25 to 49	50 to 99	100 to 249	250 or more
85c	80c	75c	70c	63c	59½c

AFTER JUNE FIRST

70c	65c	55c	50c	45c	42½c

TWO-POUND PACKAGES WITH QUEENS

1 to 9	10 to 49	50 to 99	100 or more	250 or more
$2.65	$2.55	$2.45	$2.21	$2.08½

THREE-POUND PACKAGES WITH QUEENS

1 to 9	10 to 49	50 to 99	100 or more	250 or more
$3.40	$3.30	$3.20	$2.88	$2.72

Let us prove that our stock of bees and queens is good. Send us a trial order. First in quality and service.

MERRILL BEE COMPANY

Mississippi's Oldest Shippers BUCATUNNA, MISSISSIPPI

Package Bees

Three-banded Italians

MAY 15th OR LATER.

• • •

Overweight Packages.
Shipped in Light Cages,
Queens Personally Reared.
Drones and virgins excluded.
We Guarantee Pure Mating,
No Disease, Safe Arrival and
Satisfaction.

• • •

Prices	1-9.	10-49.	50 or more
Two-pound..	$2.65	$2.55	$2.45
Three-pound..	3.40	3.30	3.20

• • •

Discount from price of 50: 100-249, 10%; 250 or more, 15%.

• • •

Better reserve your shipping date now.

The Crowville Apiaries

Winnsboro, Rt. 1, La.

Northern Bred Daughters from Imported Italian Queens

During the past two years we have been testing in our apiaries some of the finest Italian queens that we could secure from northern Italy. These are the pure leather-colored Italian queens. We sell daughters of this Imported stock.

GENTLE, HANDLE EASILY, EXCELLENT WORKER BEES

75c Each Postpaid

ANY QUANTITY AFTER JUNE 15.

Send your order now. Queens delivered fresh from our northern yard.

The A. I. Root Company

Medina, Ohio

Garon's HONEY FED "Diamond" PACKAGE BEES AND QUEENS

Now that the early and most urgent reinforcement of your colonies is well under way, the equally important procurement of GOOD QUEENS is to be seriously considered. Our "Diamond" QUEENS have proven their mettle in drought stricken sections the last several years. (Testimonials upon request.)

QUEENS—1-9, 85c; 10-24, 80c; 25-49, 75c; 50-99, 70c; 100 or more, 63c; 250 or more, 59½c.

If the time spent with your bees does not prove both profitable and enjoyable, there is something wrong with them. Try our LARGE BRIGHT HONEY FED "Diamond" package bees. They are what you need. Drones and virgin queens excluded. Health certified. Correct weight at destination. Shipment on scheduled time. Satisfaction.

PRICES

2-LB. PKGS. WITH QUEENS
1-9, $2.65; 10-49, $2.55; 50-99, $2.45; 100-249, $2.20½; 250 or more, $2.08½.

3-LB. PKGS. WITH QUEENS
1-9, $3.40; 10-49, $3.30; 50-99, $3.20; 100-249, $2.88; 250 or more, $2.72.

DEPENDABILITY SERVICE HONESTY

GARON BEE CO., Donaldsonville, La.

SURPLUS ---

There is a surplus of most agricultural products and there has been a surplus for several years, of

—WHEAT
—COTTON
—CORN
—PORK

What about Honey?

The **HONEY** surplus is just about **NIL**, in spite of big reductions in exports. **HONEY** is being sold in larger quantities than ever before and at advancing prices. **WHY?**

WHAT IS THE ANSWER?

American Honey Institute

It is your ADVERTISING AGENT.

It is your PUBLICITY BUREAU.

It popularizes and helps sell YOUR HONEY.

The Institute Organization BELONGS TO YOU.

Are you going to "Let George Do It?" Are you doing your part to maintain the Institute? Do you pay your share of the expenses? Have you pledged for 1934? Send in this pledge **TODAY—DO IT NOW.**

American Honey Institute,
Commercial State Bank Bldg., Madison, Wisconsin.

I pledge my support to the work of the American Honey Institute for 1934. (Basis—$1.00 per ton of honey produced; or 20 pounds of honey per ton, delivered to nearest Institute Honey Receiver. List on page 442, July, 1933.)

☐ **I will send my check direct to the Institute.**

☐ **I will send the honey to**.....
(Receiver)

when ready. Estimated amount of money $.....

or Honey.....**lbs. Date Payable**.....

Name .....

Address .....

Mail to American Honey Institute, Commercial State Bank Bldg., Madison, Wis.

Why Fish Around

For Better Queens and Bees

From April 15 to last of June we will be able to supply you good heavy packages of nice young three-banded Italian Bees, headed with queens that give satisfaction and are not likely to be superseded the first season.

Every precaution taken to have them reach you on time, and in nice shape.

CODE PRICES

PACKAGE BEES—EXPRESS CHARGES COLLECT

	1-9	10-49	50 or more
2-lb. pkg. with queens.	$2.65	$2.55	$2.45
3-lb. pkg. with queens.	3.40	3.30	3.20

Queens: 1 to 9, 85c each; 10 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each

SHAW & HOMAN

SHANNON MISSISSIPPI

Package Bees and Queens

✪

We guarantee pure 3-banded Italian stock, prompt and efficient service, health certificate, young purely mated queens, scientifically bred from highest producing well marked gentle stock. We rear our queens in 2 and 3 standard frame nuclei. Cells are produced under heavy feeding of honey (the bees' own sweet).

Prices f. o. b. here and subject to market agreement. Code prices.

✪

Bernard & Bejeaux Apiaries

ATCHAFALAYA, LA., U. S. A.

We gladly support the American Honey Institute.

We've found the Bee
We've tried them all **"Master-Bred"** Dark Italians from Italy

For sixteen years we have tried all the noted strains in America. Also all the different races. All during these sixteen years we never found a strain with all-around good qualities like the imported Italians from Italy.

During these sixteen years we have bred our imported stock for gentleness and honey-producing qualities. They have all the good qualities a beekeeper could desire in a strain. Our foundation stock comes direct from Italy.

PROMPT SERVICE—SATISFACTION GUARANTEED

We have never had any disease in our outfits. Health certificate with every shipment.

READ WHAT THEY SAY

"Those dark Italian package bees I purchased from you are the very best bees I ever bought in my life."—Ohio.

Try some MASTER BRED bees. Test them against any anywhere, and note the results. YET THEY COST NO MORE.

	1-9.	10-49	50-99
2-lb. combless	$2.65	$2.55	$2.45
3-lb. combless	3.40	3.30	3.20

With Untested Queens.

Untested queens, 1, 85c; 10, 80c; 25, 75c; 100, 70c each.

CIRCULAR FREE. Ask for our easy term offer.

The V. R. Thagard Co., Greenville, Ala.

Better-Bred Italian Queens

HEAVY WEIGHT PACKAGES, YOUNG BEES

Do you want your packages on time with a queen in them that will produce bees that will give you the best yield possible? If so, place your order with us. Every order receives our prompt attention. If for any reason we can not fill your order you are notified at once.

By all means, introduce a young queen in place of that old failing one. It will pay you well.

Packages until June 1st:

	1-9	10-49	50 or more
Two-pound	$2.65	$2.55	$2.45
Three-pound	3.40	3.30	3.20

Queens until June 1st:

1-9	10-24	25-49	50 or more
$.85	$.80	$.75	$.70

10% discount on lots of 100 to 249.
15% discount on lots of 250 or more.

Calvert Apiaries, Calvert, Ala.

The Best Place Now

To Buy Package Bees & Queens

Since prices are the same, buy where you can get the best strain of bees combined with prompt service and honest dealings. If you are not satisfied with your strain of bees or your shipper, give me a trial. I guarantee to please you.

My leather colored Italians are the best honey gatherers, gentle and prolific. Accredited and Certified by Alabama Department of Agriculture.

Code Prices--Express Collect

	1-9	10-49	50-75
2 lbs., including queen	$2.65	$2.55	$2.45
3 lbs., including queen	3.40	3.30	3.20
4 lbs., including queen	4.15	4.05	3.95

If wanted **PARCEL POST**, add 10c plus postage.

Queens, Guaranteed Mated Pure. Select

(One grade only). One, 85c; 10, 80c each; 25, 75c each; 50, 70c each. 10% discount off 50 prices for 100 packages or queens. No charge for clipping.

Shipments on the day you name. I have the bees, men and equipment to handle all orders promptly. Health certificate and all necessary papers accompany shipment. Full weight packages guaranteed.

Jasper Knight, Hayneville, Alabama

QUALITY BRED ITALIAN BEES AND QUEENS

We offer you unsurpassed quality, young bees, select queens, on time shipments, large quantities, full weights, light cages, safe arrival and satisfaction.

——CODE PRICES——

Two-pound Packages Italian Bees with Queens, Express Collect

1 to 9	10 to 49	50 to 99	100 to 249	250 or more
$2.65 each	$2.55 each	$2.45 each	$2.20½ each	$2.08½ each

Three-pound Packages Italian Bees and Queens, Express Collect

1 to 9	10 to 49	50 to 99	100 to 249	250 or more
$3.40 each	$3.30 each	$3.20 each	$2.88 each	$2.72 each

Queens by Mail Postpaid

1 to 9	10 to 24	25 to 49	50 to 99	100 to 249	250 or more
85c each	80c each	75c each	70c each	63c each	59½c each

For queenless packages, deduct price of queens. For shipment by parcel post, add 20c per package, plus postage. For larger packages, add 80c for each additional pound of bees. Place your order now for choice of shipping dates and have your bees when wanted. Full line of Lewis Beeware and Dadant's Foundation at catalog prices.

YORK BEE CO., THE UNIVERSAL APIARIES JESUP, GA.

Full weight young bees, guaranteed arrival, prompt shipment, health certificate, three-band Italian Queens and Package Bees

Young Mated Queens, Each

1-9	10-24	25-49	50-99	100-249	250
85c	80c	75c	70c	63c	59½c

Package Bees, each containing a young mated queen, shipped express collect.

Two-pound Packages

1-9	10-49	50-99	100-249	250
$2.65	$2.55	$2.45	$2.21	$2.08½

Three-pound Packages

1-9	10-49	50-99	100-249	250
$3.40	$3.30	$3.20	$2.88	$2.72

If queenless bees are wanted, deduct the price according to the amount.
I guarantee queens or bees to arrive alive and in good condition. In case they don't, I will replace them at once with more or refund your money including express charges. I ship the day I receive your order, if requested.

D. C. JACKSON
FUNSTON GEORGIA

BEAUTIFUL YELLOW BEES
whose appearance charm and attract—
GENTLER BEES
so your beekeeping will be a pleasure—
STRONGER COLONIES
chockfull of bees all "rarin' to go"—
BIGGER HONEY CROPS
honey means good profit this season—

Then You Want
Jay Smith's Queens

•••

to head your colonies. Write for free **BOOK ABOUT BEES**, or order direct. Prices: 1 to 4, $1 each; 5 to 9, 95c each; 10 to 24, 90c each; 25 to 49, 85c each; 50 to 99, 80c each; 100 or more, 75c each. Breeding queens guaranteed for the season, shipped post paid with one-half pound of bees, $7.50 each.

•••

JAY SMITH
Route Five Vincennes, Indiana

JENSEN'S

Packages and Queens for May Delivery

"Magnolia State" Strain Italians

Queenright colonies established with our good packages of baby bees and prolific 1934 queens will still build up and store a full crop of honey in many sections of the U. S. and Canada.

A half or whole package of these vigorous young bees added to those mediocre wintered-over colonies will make them producers provided they have good queens. Our "Booster Packages" will put new life and pep into weak colonies during the building-up period, and will mean added supers of honey if introduced during June or just at the beginning of the main flow.

These late packages are the cream of the crop of bees, which is the main reason they often outstrip the earlier ones in honey production. With settled warm weather now prevailing, the finest queens of the year are being reared. Try some and be convinced of their merits, as has been the experience of other extensive honey producers. We take more than ordinary pride in our queen business.

PRICES

2-lb. Packages with Queens.		3-lb. Packages with Queens.	
1 to 9, each	$2.65	1 to 9, each	$3.40
10 to 49, each	2.55	10 to 49, each	3.30
5 0to 99, each	2.45	50 to 99, each	3.20
100 to 249 ,each	2.20	100 to 249, each	2.88
250 and up	2.08	250 and up, each	2.72

Queens: Select Untested (1934) reared from choicest breeders—1 to 9, each, 85c; 10 to 24, each, 80c; 25 to 49, each, 75c; 50 to 99, each, 70c; 100 to 249, each, 65c; 250 and up, each, 60c.
"Booster Packages" (Queenless)—2-lb., 1 to 9, $1.80 each; 10 to 49, $1.75 each; 50 to 99, $1.70 each; 100 to 249, $1.55 each; 250 and up, $1.48 each. 3-lb., 1 to 9, $2.55 each; 10 to 49, $2.50 each; 50 to 99, $2.45 each; 100 to 249, $2.23; 250 and up, $2.12 each.

Jensen's Apiaries, Crawford, Miss., U. S. A.

Pettit's Package Bees

QUALITY SERVICE EXPERIENCE

Now that the war is over, these will decide your choice.

WE HAVE THEM ALL

Even with prices well above the average, we have sold our surplus year by year. (About 8000 pounds net.)

OUR SPECIALTY

Young Italian Bees, Best Young Italian Queens, Light Convenient Packages in all sizes. Two-pound, Three-pound, Four-pound Packages. Also Five-Pound Orchard Packages for Fruit Growers. Bees without queens in all sizes of packages.

OUR SERVICE

Fast night express picks up bees after they cool off. Shipments made exactly as ordered. Rain or shine, they are off on time. Even rush orders seldom delayed. Full weight on arrival and complete satisfaction guaranteed.

OUR PRICES

Are According to Code under A. A. A.

If you are thinking of trying some Package Bees, If you are thinking of changing your Shipper, Try Pettit's Package Bees. They Satisfy

Morley Pettit, Albany, Georgia

Get Ready-Better Days Are Here

Order

HARRELL'S

Three-banded Italian Queens and Bees

They are Accredited and Certified by Alabama Department of Agriculture.

Package Bees Via Express Collect.

2-lb. pkg. with select untested queen—1 to 9, $2.65 each; 10 to 49, $2.55 each; 50 or more, $2.45 each.

3-lb. pkg. with select untested queen—1 to 9, $3.40 each; 10 to 49, $3.30 each; 50 or more, $3.20 each.

Parcel Post prices quoted on request.

Select Untested queens—1 to 9, 85c each; 9 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each.

10% discount on orders for 100 to 249 queens or packages.

15% discount on orders for 250 or more queens or packages.

All prices subject to Code changes.

Why wait, book your order early as all shippers' prices will be uniform.

Please note firm's name changed from Hayneville Apiary Co. to W. E. Harrell, but no change in personnel.

W. E. HARRELL

Hayneville Alabama

Index to Display Advertisers

Alabama Apiaries 260
American Bee Journal 306
American Honey Institute 316
Bernard & Bejeaux Apiaries 317
Berry Jr. M. C 306
Bolling Bee Co 260
Brower Bee Co 313
Calvert Apiaries 318
Citronelle Bee Co. 312
Cloverland Apiaries 307
Coombs & Son F. 262
Crenshaw County Apiaries 312
Crowville Apiaries, The 315
Dadant & Sons 263
Demuth, Mrs. Geo. S 260
Edwards Mfg. Co. 259
Eells Honey & Bee Co. 312
Ellison, C. G. 263
Falconer Mfg. Co., W. T 259
Ferebee, L. L 260
Forehand, N. 311
Forehand & Sons, W. J 306
Garon Bee Co. 315
Gaspard, J. L 305
Georgia Bee Supply Co. 262
Gladish, N. S. 305
Gooch Apiaries 307
Graham, H. E. 313
Graydon Bros. 310
Groom, Willie 307
Gulf Coast Bee Co. 263
Hann, Albert G. 306
Harrell, W. E. 320
Hazel-Atlas Glass Co ..... Inside back cover
Hilbert, Jas. E. 259
Holder Apiaries 313
Holsum Products 259
Howell, D. W. 311
Hummer & Son, Geo. A 314
Hunt & Son, M. H 258
Jackson, D. C 319
Jensen's Apiaries 319
Knight, Jasper 318
Lotz, August 259
Louisiana Southern Bee Farm 305
McVay, J. F 310
Marugg Co., The 263
Mayeux Bee Farm 312
Merrill Bee Co. 314
Merrill, G. H. 305
Mott & Son, E. E. 306
Muth Co., The Fred W 305, 308
Norman Apiaries, The 310
Norman Bros. Apiaries 311
Norman, John A. 307
Peterson, E. W. 311
Pettit, Morley 320
Root Co., The A. I ..... Back cover, 309, 315
Root Co. of Chicago, A. I 259
Root Co. of Indianapolis, A. I 262
Root Co. of Iowa, The A. I 258
Root Co. of Philadelphia, A. I 258, 262
Root Co. of Syracuse, A. I 258, 262
Running Apiaries, David 310
Savings Deposit Bank Co 263
Shaw & Homan 317
Simmons Apiaries, E. A 305
Smith, Jay 319
Smith & Co., N. B 307
Stevenson's Apiaries 312
Stover Apiaries ..... Inside front cover
Tate & Son, Joe B 311
Thagard Co., The V. R 317
Uriah Apiaries 310
White Pine Bee Farms 310
Williamson, C. J. 306
Wing, J. E. 314
Woodman Co., A. G 263
York Bee Co. 318